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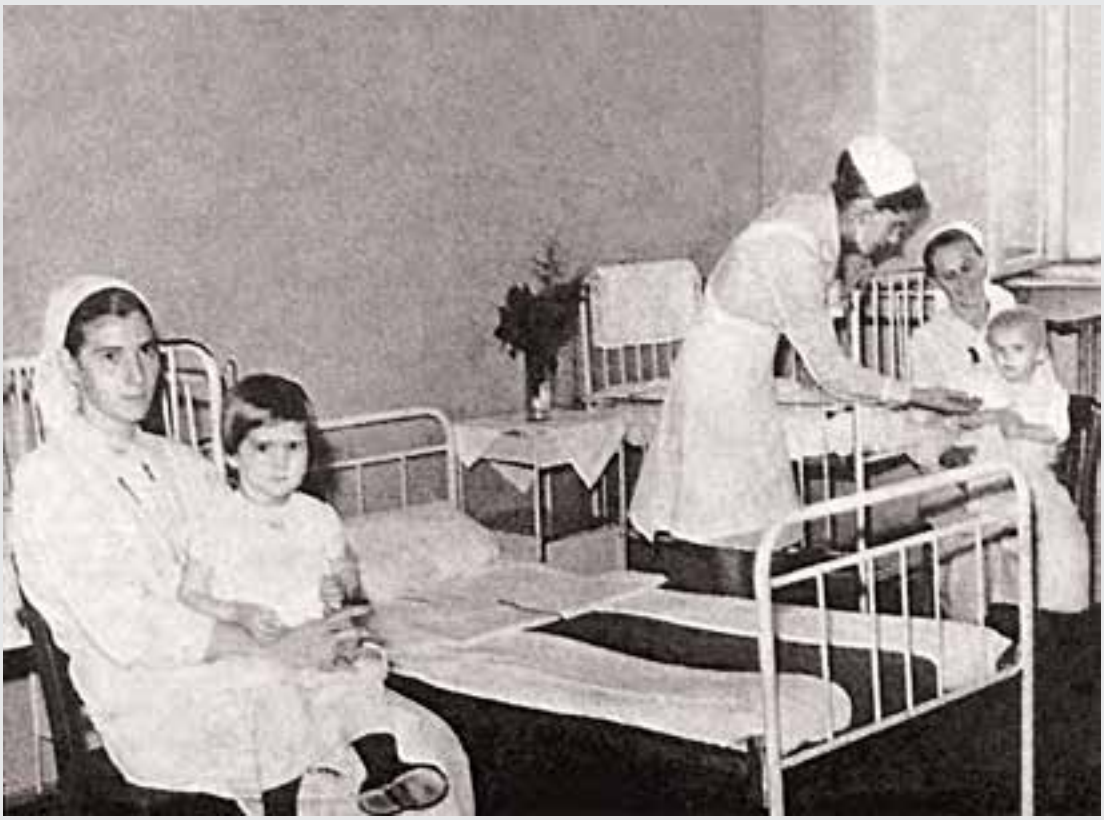

A room on the Children's Ward of the Department of Paediatrics, Tuzla, Bosnia and Herzegovina, 1952

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Dear readers, colleagues and associates,

It is my immense pleasure and great honor to address you as a guest editor of the supplement issue of The Central European Journal of Pediatrics. This issue contains more than 300 abstracts and publications that will be presented at the 5th Congress of Pediatricians in Bosnia and Herzegovina with international participation which will be held from 10-13th May 2018 in Tuzla, Bosnia and Herzegovina. This congress will brought together basic and clinical investigators in pediatrics and related areas from Bosnia and Herzegovina and other European countries. We are expecting this Congress to be very successful, and my special thanks go to all who will contribute to the success of this event.

I sincerely hope that readers will find this issue educative, interesting, and useful in clinical practice. I am extremely grateful to each and every contributor for their effort, time and willingness to share their knowledge and experience. It has been an immense pleasure interacting with each of them.

Your,
Prof. dr. Fahrija Skokic,
Pediatrician neonatologist,University Clinacal Centre Tuzla
Head of the Department of Pediatrics at the Faculty of Medicine, University of Tuzla,
Bosnia and Herzegovina
President of the Pediatric Association in Bosnia and Herzegovina

TUZLA - PRVO BOLNIČKO ODJELJENJE PRIJATELJ DJECE

Husref Tahirović
Odjeljenje medicinskih nauka Akademije nauka i umjetnosti Bosne i Hercegovine, Sarajevo, Bosna i Hercegovina

Hospitalizacija je stresan događaj za dijete dodatno praćen poteškoćama bolesti, poteškoćama procedura dijagnostike i liječenja, te psihosocijalnim problemima. Odvajanje od majke je najstresniji događaj hospitaliziranog djeteta posebno djece mlađe dobi. Boravak majke sa bolesnim djetetom olakšava njegove patnje, čini dijete sigurnijim, olakšava liječenje i skraćuje boravak u bolnici. Ovim postulatima, davne 1952. godine, vodio se dr. Žarko Mićić, tuzlanski pedijatar, kada je osnovao i utemeljio rad Dječijeg odjeljenja Opšte bolnice u Tuzli. U sažetku članka "Psychological stress in children in hospital" kojeg je objavio 1962. godine u časopisu International Nursing Review dr. Mićić je napisao: "Dječije odjeljenje bolnice u Tuzli ima 150 dječijih kreveta i 60 kreveta za majke. Od osnivanja 1952. godine Odjeljenje je primalo majke djece mlađe od 3 godine, čak i djece od 14 godina, ako su bila ozbiljno bolesna. Tokom jedne godine 5.000 - 6.000 djece i 3.500-4.000 majki prolazilo je kroz ovu bolnicu. Posjete su svaki dan u bilo koje vrijeme i traju prema želji djece i roditelja. Liječenje traje mnogo kraće nego u drugim bolnicama koje su tehnički opremljenije, a djeca ostaju u našem Odjeljenju koliko je potrebno. Smrtnost je znatno manja nego u ostalim dječijim odjeljenjima i bolnicama". Koncept dr. Mićića "majka uz bolesno dijete" pedesetih godina prošlog vijeka nije naišao na odobravanje manjeg broja saradnika, lokalnih vlasti i pedijatrijskih autoriteta u bivšoj Jugoslaviji i nije stekao međunarodnu prepoznatljivost u onoj mjeri koju je zavređivao. Uprkos tome u lokalnoj zajednici ovaj koncept se u kontinuitetu njegovao do danas. Uzimajući u obzir da je Dječije odjeljenje u Tuzli od osnivanja imalo i druge sadržaje koji su boravak djeteta

TUZLA – THE FIRST HOSPITAL CHILD FRIENDLY DEPARTMENT

Husref Tahirović
Department of Medical Sciences of Academy of Sciences and Arts of Bosnia and Herzegovina, Sarajevo, Bosnia and Herzegovina

Hospitalization is a stressful event for a child, which involves the problems of their illness, difficulties involved in diagnosis and treatment procedures, and psychosocial problems. Separation from the mother is the most stressful event for a hospitalized child, especially young children. When the mother is able to stay with the sick child, she makes the child feel more secure, which facilitates treatment and shortens the hospital stay. Doctor Žarko Mićić, a pediatrician in Tuzla, was led by these postulates, as long ago as in 1952, when he created and built the foundations for the work of the Children's Department of Tuzla General Hospital. In the summary of the article "Psychological stress in children in hospital", published in 1962 in the journal International Nursing Review, Doctor Mićić wrote: "The Children's Department of the General Hospital in Tuzla has 150 children and 60 beds for attendant mothers. Since its establishment in 1952 this department has admitted the mother of every child under 3 years of age, and even up to 14 years in the case of a serious disease. In one year 5,000 to 6,000 children and 3,500-4,000 attendant mothers pass through this hospital. Visits are paid daily and at any time of the day, lasting as long as the children and parents wish. Medical treatment takes much less time than in other hospitals, which are much better equipped technically, yet children stay on our wards as long as necessary. The mortality in this department is considerably less than in other departments and hospitals". Doctor Mićić's concept of "Mother with a sick child" did not meet the approval of a few of his associates, the local authorities and paediatric authorities in the former Yugosla-

činili humanijim onda se može reći da je Dječije odjeljenje Opšte bolnice u Tuzli već 1952. godine bilo "Odjeljenje prijatelj djece" desetljećima prije međunarodne inicijative, koja je započeta slijedom prihvaćanja Konvencije o pravima djeteta 1989. godine.

Ključne riječi: Bolnica, Majke pratilje, Bolničko odjeljenje prijatelj djece, Tuzla.

via, and did not gain international recognition to the extent that it deserved. In spite of this, in the local community this concept has been cultivated continuously until the present day. Taking into account that the Children's Department in Tuzla from its very foundation also offered other benefits that made the stay of the children more humane, it may be said that the Children's Department of the General Hospital in Tuzla was already a "Child Friendly Department" in 1952, decades before the international initiative, which began after the adoption of the Convention on the Rights of the Child in 1989.

Key words: Hospital, Attendant mothers, Child friendly department, Tuzla.

KAŠALJ

Branimir Nestorović
Univerzitetskoj dječjoj klinici „Tiršova"

U hladnim periodima godine skoro polovina dece koja se javlja pedijatru žali se na kašalj kao dominantan simptom. U daleko najvećem broju slučajeva radi se o reakciji na akutne virusne infekcije, tj. pokušaju da se refleksom kašlja eliminiše višak sekreta iz disajnih puteva. Refleks kašlja je vrlo kompleksan. Kontroliše ga centar u kičmenoj moždini, a učestvuju nervna vlakna vagusa, trigeminusa, glosofaringeusa i frenikusa. Kašalj podrazumeva sinhronizovanu aktivnost velikog broja respiratornih mišića. Receptori se nalaze od farinksa do bronhiola. Stoga bilo kakav nadražaj dovodi do aktiviranja refleksa. Posle maksimalnog udaha, sledi forsirani ekspirijum (mišići prednjeg trbušnog zida pritiskaju abdominalni sadržaj, a pritisak se prenosi na toraks). Pošto je larinks zatvoren, pritisak u toraksu dostiže i do 300 mmHg. Stoga se pri otvaranju glotisa postiže veoma velika brzina protoka (i do 600 litara u minuti). Ovo veoma efikasno uklanja

COUGH

Branimir Nestorović, University Children's Hospital Tiršova, Belgrade, Serbia

During the coldest periods of the year, almost half of children in pediatric office are complaining of cough as the dominant symptom. In most cases, it is a reaction to acute viral infections i.e. in the attempt to eliminate excess secretion from the upper airways by the cough reflex.The caugh reflex is very complex. It is controlled by the center of the spinal cord, and the fibers of the nervus vagus, trigeminus, glosofaringeus and phrenicus are also involved.Cough implies synchronous activity of a large number respiratiry muscles. The cough receptors are located mainly from the trachea to bronchi. Thus, any irritation activates the reflex. After a maximum inhale, the forced expirium follows (the front abdominal wall muscles compress abdominal content, and the pressure is transmitted to the thorax). Since the larynx is closed, the pressure in the thorax reaches up to 300mmHg. Therefore, a high flow rate 8 up to 600 liters per minute) is

mukus i infektivne agense ili strana tela iz disajnih puteva. Akutni kašalj - Ova vrsta kašlja traje oko 3-6 nedelja i skoro je uvek vezana za prethodnu akutnu virusnu infekciju. U suzbijanju ovog kašlja se najčešće koriste sedativni antihistaminici. Obzirom da je skoro uvek pratilac kašlja i hipersekrecija mukusa, dosta često se koriste mukolitici. Potrebno je napomenuti da su oni kontraindikovani u dece ispod 2 godine života. Hronični kašalj - Traje preko 6 nedelja, a dva najčešća uzroka su postnazalno slivanje sekreta i astmatski kašalj. Poseban problem je što relativno veliki broj pacijenata ima više uzroka kašlja (npr. često se sreće alergijski rinitis sa postnazalnim slivanjem sekreta i astmatskim kašljem). Astmatski kašalj je veoma čest, ali je teško u najvećem broju slučajeva utvrditi dijagnozu. Od najveće pomoći u postavljanju dijagnoze u ove dece je prisustvo atopije (ekcema, pozitivne porodične anamneze ili pozitivni testovi na alergiju) .. Konačna potvrda dijagnoze se dobija uvođenjem inhalatornih steroida. Iako se ekspektoransi široko koriste u lečenju pacijenata sa hipersekrecijom mukusa, nije za većinu utvrđen tačan mehanizam dejstva niti optimalno doziranje (ovo se posebno odnosi na najčešće korišćeni acetil cistein čija je bioraspoloživost veoma mala, pa je nejasna tačna doza i interval doziranja.

achieved when opening the glottis. This effectively removes mucus and infectious agents or airway foreign bodies.Acute cough-This type of cough lasts about 3-6 weeks and it is always related to the previous acute viral infection. Sedative antihistamines are used to manage this caugh. Taking into consideration that caugh is often followed by mucus hypersecretion, mucolytics are used for the treatment. It is important to note that the use of mucolytic agents is contraindicated in children under 2 years of life.Chronic cough-It lasts over 6 weeks, and the two most common causes are post- nasal secretion drip and asthma cough. The problem is that a relatively large number of patients have several causes of caughing (e.g. allergic rhinitis with post- nasal secretion drip and asthma cough).Asthma cought is quite common, but in most cases it is difficult to establish diagnosis.Of the greatest help in diagnosing these childen is the presence of atopics (eczema, positive family history or positive allergy tests). The final confirmation of diagnosis is obtained by inhaled steroids administration.Although the expectorans are widely used in the treatment of patients with mucus hypersecretion, for many of them it is still not known the exact mechanism of action or optimum dosage (this particularly applies to the most commonly used acetyl cysteine, whose bioavailability is very small, so the exact dose and the dosage interval are unclear).

PERKUTANO ZATVARANJE VSD-a SA RAZLIČITIM TIPOVIMA UREĐAJA

Ender Ödemiş
Univerzitet Acibadem, Bolnica Atakent,
Odjeljenje pedijatrijske kardiologije

Perkutano zatvaranje VSD-a je još uvijek jedna od najizazovnijih procedura u interventnoj

PERCUTANEUS VSD CLOSURE WITH DIFFERENT TYPES OF DEVICES

Ender Ödemiş
Acibadem University, Atakent Hospital,
Department of Pediatric Cardiology

Percutaneous VSD closure is still one of the most challenging procedures of the interven-

kardiologiji. Obzirom da je lokacija perimembranoznog VSD-a veoma blizu određenih anatomskih struktura kao što je aorta, trikuspidalna valvula i provodna tkiva, ova procedura nosi sa sobom i rizik pojave nekih značajnih komplikacija. Aortalna regurgitacija, oštećenje trikuspidalne valvule i stalni AV blokovi su neke od mogućih komplikacija.

Različite vrste uređaja mogu biti korištene za perkutano zatvaranje VSD-a uključujući dizajnirane uređaje sa dvostrukim diskom, kojlove i uređaje za zatvanje PDA. Međutim, odabir uređaja je jedan od najvažnijih koraka u postupku. Odabrani tip uređaja bi trebao biti prikladan za anatomsku građu i veličinu VSD-a, kao i važnu strukturu srca u neposrednoj blizini.

U ovom predavanju, predstavljamo kriterije za odabir uređaja, kao i detalje procedure zatvaranja perimembranoznog VSD-a.

tional cardiology. Since the perimembraneous VSDs are locate very close proximity certain important anatomical structures, such as aorta, tricuspid valve and conduction tissues, procedure has risks for some important complications. Aortic regurgitation, Tricuspid valve damage and permanent AV blocks are some of these possible complications.

Different sort of devices can be used for the percutaneous VSD closures including double disc designed devices, Coils and PDA closure devices have been used for this purpose. However, device selection one of the most important step of the procedure. Selected type of device should be convenient for the VSD anatomy, size and nearly important heart structure.

In this lecture, we present the criteria of device selection and details of the perimembraneous VSD closure procedure.

ZNAČAJ NEONATALANOG ULTRAZVUČNOG SKRININGA U OTKRIVANJU ANOMALIJA BUBREGA I URINARNOG TRAKATA

Nedima Atić
Univerzitetsko klinički centar Tuzla,
Klinika za dječije bolesti

Anomalije bubrega i urinarnog trakta(AUT) se javljaju u 10% populacije, čine 20-30% svih konatalnih anomalija, nalaze se u 10% obducirane novorođenčadi. Javljuju u 1: 500 živorođeni fetusa i uzrokuju neonatalna smrt u 1:2000 poroda. Najčešće uzrokuju progresivnu hroničnu bolest bubrega i uzrok su 45% svih bubrežnih insuficijencija. Javljaju se izolirano, a u 2/3 slučajeva su udružene sa drugim anomalijama. Za urođene anomalije bubrega i

IMPORTANCE OF NEONATAL ULTRASOUND SCREENING DETECTION OF KIDNEY AND URINARY TRACT ANOMALIES

Nedima Atić
Clinic for Children's Diseases,
University Clinical Center Tuzla, Tuzla,
Bosnia and Herzegovina

Anomalies of the kidney and urinary tract (AUT) occur in 10% of population, making up for 20-30% of all congenital anomalies, and they are found in 10% of infants at autopsy. They are reported in 1:500 live- born fetuses and cause neonatal death in 1: 2000 births. Most commonly they cause progressive chronic disease and 45% of all renal insufficiency. They appear isolated, and in 2/3 of cases are associated with other anoma-

urinarnog trakta u međunarodnoj stručnoj literaturi se koristi engleski skraćenica CAKUT (Congenital Anomalies of Kidney and Urinary Tract). Najveća incidenca kongenitalnih anomalija u populaciji je na urogenitalnom traktu. Razlog za to je veoma složeni zajednički embrionalni razvoj urinarnog i spolnog sistema. Najveći broj AUT i bubrega je opstruktivne prirode i treba ih što ranije otkriti. U tome veoma važno mjesto ima ultrazvučni skrining, pregled koji omogućuva prenatalnu i postnatalnu dijagnozu. Predstavlja veliki izazov u prentalnoj dijagnostici sa visokom stopom detekcije od 85% do 90%, iako je uzrok i vrstu anomalije teže izdiferencirati. AUT obično se otkrivaju kada postoji urinarna infekcija, renalna insuficijencija, abdominalna tumefakcija i zaostajanje u rastu. Ponekad to može biti kasno, tj. kada je već došlo do pojave sekundarnog oboljenja koje je nastalo zbog postojanja kongenitalne anomalije. Stoga njihovo rano dijagnostikovanje omogućava pravovremeno liječenje i sprečava razvijanje komplikacija koje ponekad imaju i smrtni ishod. U posljednji 20 godina ultrazvučna (UZ) dijagnostika zauzima značajno mjesto u ranom otkrivanju AUT. Prenatalni i postnatalni UZ pregled je metoda izbora u dijagnostici AUT. UZ skriningom u otkrivanju anomalija značajno se utiče na kasniji morbiditet. Daljom dijagnostikom se utiče na pravovremneo hirurško korektivno zbrinjavanje anomalije uz odgovarajuće konzervativno liječenje u cilju očuvanja bubrežne funkcije.

lies. The English abbreviation for congenital anomalies of the kidney and urinary tract-(CAKUT) is used in international professional literature. The biggest incidence of congenital anomalies in population is found in the urogenital tract. The reason for this is a very complex and mutual embrionyc development of the urinary and reproductive system. A great number of AUTs and kidneys is of obstructive nature and need to be detected as early as possible. For all this, an important role plays ultrasound screening that allows for prenatal and postnatal diagnosis. It represents a major challenge in prenatal diagnostics with a high detection rate of 85- 90%, although the cause and the type of anomaly are more difficult to differentiate. AUT is usually detected when there are present urinary infection, renal insufficiency, abdominal tumefaction and growth retardation. Sometimes it may be late, i.e. when there is a secondary disease occuring due to the existence of congenital anomaly. Therefore, their early diagnosis allows for timely treatment and prevents the development of complications that sometimes end up with the deadly outcome. In the last 20 years, ultrasound diagnostics occupy a significant place in early detection of AUT. Prenatal and postnatal ultrasound is the method of choice in AUT diagnostics. Ultrasound screening in the detection of anomalies has significantly influenced later neonatal morbidity. Further diagnostics affects the timely surgical corrective treatment of anomaly with appropriate conservative treatment for the purpose of preserving the renal function.

POLICISTIČNI OVARIJALNI SINDROM U ADOLESCENCIJI

Devleta Balić
Zavod za humanu reprodukciju "Dr. Balić", Tuzla, Bosna i Hercegovina

Policistični ovarijalni sindrom (PCOS) je jedan od najčeščih endokrinoloških poremećaja kod žena u odraslom dobu a svoje karakteristike pokazuje i u doba adolescencije. Dijagnozu PCOS u adolescenciji je teško postaviti jer promjene koje se normalno dešavaju u sklopu rasta i razvoja mogu imitariti simptome PCOS. Neredovne menstruacije u prvim ginekološkim godinama, izraženi znaci pojačane produkcije androgena kao što su akne i hirzutizam, nagle promjene u tjelesnoj težini dio su normalnog pubertetskog razvoja. Prolazna multifolikularna ovarijska morfologija i relativna insulinska rezistencija nastaju sekundarno zbog povisenog nivoa hormona rasta. Neusaglašenost kriterija za postavljanje dijagnoze PCOS u adolescenciji ne smije biti razlogom propušstanja tretmana ovog stanja već u tom životnom razdoblju, jer to može imati dalekosežne posledice na reproduktivno zdravlje i kardiometaboličke rizike kod tih osoba. Rana menarha, neredovne menstruacije koje traju vise od dvije godine nakon menarhe, pojačana dlakavost i akne su klinički pokazatelji koji bi nas trebali uputiti na dijagnostičku procedure dokazivanja PCOS. Fenotipske karakteristike vezane za gojaznost i raspored masnog tkiva također su smjernice koje bi nas uz prethodne kliničke naznake uputile na PCOS. Biohemijske analize kao što je određivanje nivoa testosterone, SHBG, AMH te standardnih kriterija FSH/LH omjera uz OGTT i insulinemiju i lipidni profil su neophodne osobito u procjeni onih osoba sa PCOS koje imaju i veći metabolički rizik. Pravovremeni tretman koji započinje higijensko-dijetetskim mjerama nastavlja se i sa medikamentoznom terapijom. Oralne kontraceptivne tablete suteraoina izbora pogotovo kod seksualno aktivnih adolescentica, a značajno utiču na smanjenje pojačane dlakavosti i akni što je bitan aspekt terapije u ovom

POLYCYSTIC OVARY SYNDROME DURING ADOLESCENCE

Devleta Balić
Department of Human Reproduction "Dr. Balić", Tuzla, Bosnia and Herzegovina

Polycystic ovary syndrome (PCOS) is one of the most common endocrine disorder in adult women and has specific characteristics during adolescence. It is challenging to make a diagnosis of PCOS in adolescents because normal developmental changes in puberty can mimic symptoms of PCOS. Irregular periods in first gynecological years, sings of abnormal androgen production (hirsutism and acne), changes in body weight are the part of normal pubertal development. Transistent multifollicular ovarian morphology and relative insulin resistance are consequence of elevated growth hormone levels. Phenotypic features as obesity and body composition are signs that indicate PCOS. The difference of criteria in diagnosing PCOS in adolescence should not be a reason for lack of treatment this condition in this period of life because of implications for further reproductive health and cardiometabolic risks. Early menarche, irregular periods more than two years after menarche, hirsutism and acne are the clinical features that indicates other diagnostic procedures for diagnosis of PCOS. Biochemical tests as a testosterone level, Sex hormone binding globulin, Anti Mullerian hormone and standard markers as a FSH/LH ratio, OGTT, insulinemia and lipid profile are necessary for identifying patients with PCOS and these with elevated cardiometabolic risk. Right treatment that began with lifestyle changes and proper diet continues with medicaments. Oral contraceptive pills are the therapy of choice in sexual active adolescents. They improve features of hirsutism and acne what is very important part of therapy in this period. Therapy with metformin is method of choice in overweight adolescents with elevated cardiometabolic risk. Diagnosis and treatment of PCOS in adolescence need mul-

životnom razdoblju. Terapija sa metforminom je izbor kod osoba koje imaju veći kardiometabolički rizik , prekomjernu tjelesnu težinu a može se kombinirati i sa oralnom hormonskom kontracepcijom. Dijagnoza i tretman PCOS u adolescenciji zahtjevaju multidisciplinarni pristup a pravovremeni tretman je neophodan zbog uticaja PCOS na reproduktivno zdravlje i druge zdravstvene rizike.

Ključne riječi: PCOS, adolescenti, zdravstveni ishod

tidisciplinary approach and early treatment is necessary in prevention of impact of PCOS on reproductive health and other health risks.

Keywords: PCOS, adolescents, health outcome

ALTERNATIVNI METODI HRANJENJA U DJECE SA POREMEĆAJIMA ISHRANE SA OSVRTOM NA ENTERALNU PREHRANU

Esad Brigic
Grupna privatna praksa "DR. Brigić"

Klinička prehrana važan je segment liječenja bolesnika, češće kao potporna terapija, ali povremeno i kao osnovni način liječenja. Obuhvata sve oblike prehrane bolesnika tj. uobičajenu prehranu na usta, prehrambene modifikacije i pripravke te enteralnu i parenteralnu prehranu, a u užem smislu obuhvata samo enteralnu i parenteralnu prehranu. Enteralna prehrana predmnijeva unos hrane i/ili komercijalnih nutritivnih otopina i pripravaka, u prvom redu sondom u želudac ili početne dijelove tankog crijeva. Isto tako moguć je i unos na usta kao dopuna svakodnevnoj prehrani ili kao osnovna prehrana u bolesnika koji nisu u mogućnosti konzumirati normalnu hranu. Ideja vodilja i cilj njenog razvoja je osigurati bolji kvalitet života svim bolesnicima kojima je potrebna kvalitetna, dopunska prehrana. Odluku o vrsti kliničke prehrane moguće je donijeti tek nakon što se provede procjena stanja uhranjenosti i ocijeni stanje di-

ALTERNATIVE METHODS OF FEEDING CHILDREN WITH FOOD INTAKE DISORDERS WITH AN EMPHASIS ON ENTERAL NUTRITION

Esad Brigic,
Groupe private practice "Dr. Brigic", Tuzla, Bosnia and Herzegovina

Clinical nutrition is an important segment of the treatment of patients, more often as a supporting therapy, but occasionally as a basic treatment. It encompasses all forms of nutrition of patients, the usual diet through mouth, nutrition modifications and products , and enteral and parenteral diet but more specifically it means it means only enteral and parenteral diet. Enteral nutrition means food intake and / or commercial nutritive solutions and preparations, primarily by probe in the stomach or the initial parts of the small intestine. The intake is also possible directly through the mouth as a supplement to the daily diet or as a basic diet in patients who are not able to consume normal foods. The main pupose of enteral nutrition is to ensure a better quality of life for all patients who need a qood supplementary diet. The decision about the type of clinical nutririon is based on the clinical assesment of

gestivnog trakta a prije svega- tankog i debelog crijeva. Prioritetni cilj kliničke prehrane danas je održanje cjelovitosti sluznice tankog i debelog crijeva, s naglaskom na hranjenje bolesnika normalnom hranom uz modifikacije ili enteralnim pripravcima kada je god to moguće tj. Kada ne postoje apsolutne kontraindikacije. Enteralna prehrana podrazumijeva dodatak prehrani: peroralno, transnazalno (nazogastrična i nazojejunalna sonda), endoskopskim pristupom (PEG/MIC KEY i PEJ) i/ili hirurškim pristupom (gastrostoma, jejunostoma). Osnovni preduslovi za enteralnu prehranu su: funkcionalno sposoban digestivni trakt, nutritivni, više od 100 cm preostalog tankog crijeva i zadovoljavajuća apsorptivna sposobnost tankog crijeva.

Kljucne riječi: peg, Mic key, ishrana

nutrition status and the evaluation of digestive tract condition, most importantly small intestine and colon. The main goal of the clinical diet today is to maintain the integrity of the mucous membrane of the small intestine and colon with an emphasis on feeding patients with normal foods along with modifications or enteral preparations whenever possible, i. e. when there are no absolute contraindications. Enteral nutrition implies nutritional supplementation: oraly, through the nose, (nasogastric and nasojejunal probe), via endoscopic approach (PEG / MIC KEY and PEJ) and / or surgical approach (gastrostomy, jejunostoma). The basic preconditions for enteral nutrition are: functionally capable digestive tract, , more than 100 cm of the remaining small intestine and satisfactory absorption capacity of, small intestine.

Key words: peg, Mic key, nutrition

ORALNI ALERGIJSKI SINDROM

Ćosićkić Almira
Klinika za dječije bolesti, Univerzitetski klinički centar Tuzla, Bosna i Hercegovina

Oralni alergijski sindrom (OAS) je kontaktna alergija na hranu, posredovana s IgE antitijelima, u djece s preosjetljivošću na polene. Sve vrste polenoza mogu uzrokovati nastanak OAS, a prevalenca lokalne flore je najvažniji okolinski faktor. Intezitet respiratornih simptoma ovisi o stepenu preosjetljivosti na polene. Nakon kontakta s svježim voćem ili povrćem (usljed unakrsnih reakcija na polene na koje je dijete preosjetljivo) oko 50% djece razvije orofaringealne manifestacije, 35% djece razvije udružene gastrointestinalne, respiratorne ili kožne manifestacije; ali 0.3% djece može imati teške manifestacije kao što je anafilaksija. **Cilj** procijeniti pojavljivanje manifestacija OAS u dece s atopijskim dermatitisom (AD). **Me-**

ORAL ALLERGY SYNDROME

Ćosićkić Almira
Clinic for children's diseases, University Clinical Center Tuzla, Bosnia and Herzegovina

Oral Allergy Syndrome (OAS) is a contact food allergy, mediated with IgE antibodies, in children with sensitivity to pollen. All types of pollenosis promote the occurrence of OAS, and the prevalence of local flora is the most important environmental factor. The intensity of respiratory symptoms depends on the degree of hypersensitivity to the pollen. After contact with fresh fruit or vegetables (due to cross-reactions to pollens to which the child have hypersensitivity) about 50% of children develop oropharyngeal manifestations, 35% of children develop associated gastrointestinal, respiratory or skin symptoms; but 0.3% of children may have severe manifestations such as anaphylaxis. **Aim:** to assess the occur-

tode za 114 djece e s AD-om analizirani su podaci o pojavljivanju manifestacija OAS, te podaci o preosjetljivosti na alergene hrane i/ili inhalacione alergene. **Rezultati** OAS je razvilo 13/114 (1.1%) dece s AD-om i preosjetljivosti na alergene (9 na inhalacione alergene, 4 na alergene hrane, 5 na obje grupe alergena). Orofaringealne manifestacije razvilo je 6 dece s preosjetljivošću na polene nakon što su pojeli kivi, jabuku, dinju, mrkvu, krompir; 2 je imalo udružene oralne i kožne manifestacije (eritem, urtikarija, svrbež). Troje dece s AD-om imalo je blaže respiratorne manifestacije (pojačana sekrecija iz nosa, kašalj), 1 dijete (s preosjetljivošću na polen stabla) imalo je teški astmatski napad nakon što je pojelo paradajz, 1 dijete (s preosjetljivošću na polen korova, polen stable) je imalo anafilaksijsku reakciju nakon konzumiranja lubenice. **Zaključak** najčešće manifestacije OAS su orofaringealne (takođe i u dece s AD-om), teške manifestacije su rijetke, ali mogu biti životno ugrožavajuće. Mogućnost razvoja ovih teških manifestacija naglašava neophodnost opreza pri konzumiranju svežeg voća i povrća u dece s preosjetljivosti na polene

Ključne riječi: oralni sindrom • alergija• djeca

rence of manifestations of OAS in children with atopic dermatitis (AD). **Methods:** in 114 children with AD data of occurrence manifestations OAS, data on sensitivity to food and/or aeroallergens, were assessed. **Results:** OAS developed in 13/114 (1.1%) children with AD and with hypersensitivity to allergens (9 on aeroallergens, 4 on food allergens, 5 for both group of allergens). Oropharyngeal manifestations of OAS developed 6 children with hypersensitivity to pollens after the ingestion of kiwi, apple, melon, carrot, potato; 2 had associated oral and skin manifestations (erythema, urticaria, itching). Three of children with AD had a mild manifestation of respiratory tract (rhinorrhea, cough), one child (with hypersensitivity of tree pollens) had a severe asthmatic attack after the ingestion of tomato, and one child (with hypersensitivity to weed pollen, tree pollen) had anaphylactic reactions after the ingestion of watermelon. **Conclusion:** the most common manifestation of OAS is oropharyngeal (in children with AD also), severe manifestations are rare but can be life-threatening. The possibility of these severe reactions emphasizes the necessity of caution in the ingestion of fresh fruits and vegetables in children with hypersensitivity to pollens.

Key words: oral syndrome • allergy • children

NEONATALNA HIPERBILIRUBINEMIJA

Aida Kadić
Opšta bolnica Irfan Ljubijankić Bihać

Hyperbilirubinemija(žutica,vidljivikterus) predstavlja najčešću neonatalnu dijagnozu i zauzima značajno mjesto u patologiji novorođenčeta. Najčešće stanje koje izaziva zabrinutost roditelja za njihovo novorođenče je žutica. Žutica je povišena razina bilirubina u krvi . To

NEONATALHY PERBILIRUBINEMIA

Aida Kadić
General Hospital Irfan Ljubijankić, Bihać, Bosnia and Herzegovina

Hyperbilirubinemia (jaundice, visible icterus) represents most common neonatal diagnosis and occupies a significant place in the pathology of the newborn. Most common condition that causes parents concern for their newborn

znači i produžen boravk u rodilištu i dodatnu zabrinutost roditelja.U pojedinim slučajevima potrebno je liječenje koje se najčešće provodi izlaganjem novorođenčeta“ plavom svjetlu“-fototerapiji.Vidljivo žutilo kože,sluznica i bjeločnica posljedica je obojena tkiva bilirubinom.problem novorođenačke žutice može se promatrati sa više aspekata,od kojih je vremensko pojavljivanje žutice jedan od najvažnijih u dijagnozi.Žutica novorođenčeta koja se javlja (primjeti)prije 36 sati života zahtjeva ozbiljnu evaluaciju kliničkog stanja djeteta i laboratorijskih parametara kojim se potvrđuju ili isključuju uzroci rane žutice novorođenčadi. Hyperbilirubinemija je odraz poremećenog metabolizma bilirubina,tj.ne mogučnost jetre da konjugira sav raspoloživi bilirubin.Javlja se kako u donešene tako i u nedonešene novorođenčadi.Puno češće u neonatologiji žutica se pojavljuje oko ili nakon 72 sata i traje u toku prve sedmice,nalčešće spontano iščezava(fiziološka žutica)50% donešene i preko 50% nedonešene novorođenčadi razvije kliničku sliku vidljive žutice u prvoj sedmici života. Samo 5% od te novorođenčadi ima serumski bilirubin veći od 17mg/dl.(290,7 mmol/L) Hyperbilirubinemija je u neonatalnom periodu pretežno beninga,indirektog tipa ukazuje na ograničenu sposobnost novorođenčeta da metabolište indirektni bilirubin.Nije jednostavno i precizno definisati kada fiziološka žutica prelazi u patološku i kada će bilirubin u svom komplekson metabolizmu prekoračiti dozvoljene granice i ispoljiti neurotoksičnost.

Ključne riječi: novorođenčad, hyperbili-rubinemija, neonatalna.

is jaundice. Jaundice is an elevated level of bilirubin in the blood. That means an extended stay in the maternity ward and parent's additional concern. In some cases there is a need for treatment that is most often performed by exposing the newborn to “blue light” – phototherapy. Visible yellowness of skin, mucosa and sclera is a result of tissue colored by bilirubin. The problem of newborn jaundice can be observed in several aspects, of which the timing of the appearance of jaundice is most important for the diagnosis. A newborn jaundice that appears (notices) before 36 hours of life requires a serious evaluation of newborn's clinical condition and laboratory parameters that confirm or exclude the causes of early newborn jaundice. Hyperbilirubinemia is a reflection of disturbed bilirubin metabolism, i.e. the inability of liver to conjugate all available bilirubin. It is commonly found in both preterm and posttermnewborns. Much more often in neonatology jaundice appears around or after 72 hours and lasts during the first week, spontaneously disappearing (phlegmatic jaundice). 50% postterm and more than 50% of preterm newborns develop a clinical picture of a visible jaundice during the first week of life. Only 5% of those newborns have serum bilirubin greater than 17mg / dl (290.7 mmol / L). Hyperbilirubinemia is predominantly benign in neonatal period, indirect type indicates the limited ability of a newborn to metabolize unconjugated bilirubin. It is not easy and precise to define when the physiological jaundice passes into the pathological and when will bilirubin in its complex metabolism exceed the permissible limits and exhibit neurotoxicity.

Keywords: newborn, hyperbilirubinemia, neonatal.

KADA LIJEČNIK PRIMARNE ZDRAVSTVENE ZAŠTITET UPUĆUJE DIJETE KARDIOLOGU?

Senka Mesihović-Dinarević, Poliklinika „Eurofarm“ Sarajevo, BiH

Svako novorodenče, dojenče, dijete ili adolescent koji se predstavlja liječniku iz primarne zdravstvene zaštite sa znacima ili simptomima kardiovaskularne bolesti, treba uputiti na evaluaciju nalaza na srcu pedijatru subspecijalisti kardiologu. Znaci koji upućuje na srčanu bolesti, variraju zavisno od dobi djeteta, ali obično uključuju: slab napredak u tjelesnoj težini tokom prve godine života, ubrzano disanje ili znojenje tokom hranjena odnosno obroka, ataci cijanoze ili ataci slični konvulzijma, batičatost prstiju, sinkope/nesvjestice prouzrokovane vježbom, gubitak svijesti, bol u grudima ili palpitacije. Trudnicu, čije nerođeno dijete ima rizik od urođene srčane anomalije, treba uputiti pedijatru kardiologu zbog detaljne evaluacije srca, čak i u 12-14 sedmici gestacije. Ukoliko pedijatar auskultira dijastolni šum, šum koji zvuči patološki, dokumentuje hipertenziju, sumnja na reumatsku bolest, inocentni šum koji postaje glasniji, sistolni klik, udvojen drugi ton i fiksno udvojen drugi ton, uoči uvećano srce na rentgenskom snimku, abnormalan elektrokardiogram, brza srčana frekvenca u odnosu na dob djeteta, sindromi sa urođenim srčanim anomalijama, slijedeći korak u algoritmu pravilne dijagnostike jeste evaluacija kardiovaskularnog sistema od strane subspecijaliste kardiologa. Djeca sa pozitivnom porodičnom anamnezom o ranom početku ateroskleroze i stečene srčane bolesti, djeca sa dijagnosticiranom Kawasakijevom bolesti koja može aficirati koronarne arterije srca, zahtijevaju pregled pedijatra kardiologa. Kod asimptomatske djece, ukoliko pedijatar prilikom pregleda otkrije da su ona cijanotična, tahipnoična, tahikardična ili hipotenzivna, bilo koji od navedenih simptoma, može

WHEN A PHYSICAL FROM PRIMARI HEALTH CARE REFERS A CHILD TO PEDIATRIC CARDIOLOGIST?

Senka Mesihović-Dinarević, Polyclinic “Eurofarm”, Sarajevo, Bosnia and Herzegovina

Any newborn, infant, young child or adolescent that manifests signs or symptoms of cardiovascular disease to a primary health care physician, should be sent to be evaluated by a subspecialist paediatric cardiologist. Clues to the presence of heart disease vary with the age of the child, but commonly include poor weight gain during the first year, increased effort while breathing or sweating when being fed or whilst eating, blue spells/or spells similar to convulsions, clubbing, dizziness, syncope, loss of consciousness caused by exercise, chest pain or palpitations. A pregnant woman whose unborn child is at risk of congenital heart disease may benefit from referral to a paediatric cardiologist for detailed evaluation of the newborn’s heart, even as early as 12-14 weeks gestation. If a paediatrician auscultates a diastolic murmur, a murmur which sounds pathological, documents hypertension, suspects rheumatic disease, an innocent murmur which becomes lauder, a systolic click, a split second heart sound and fixed splitting of the second heart sound, notices an enlarged heart on x ray, detects an abnormal electrocardiogram or a fast heart rate in relation to the child’s age as well as syndromes with congenital heart disease, the next step in the algorithm of a correct diagnosis is the evaluation of the cardiovascular system by a paediatric cardiologist. Children with a strong family history of early onset atherosclerosis and acquired heart disease, children diagnosed with Kawasaki disease, which can affect the coronary arteries, may also benefit from evaluation by a paediatric cardiologist. In asymptomatic children, if a paediatrician during examination discoveres cyanosis, tachypnea, tachycardia or

predstavljati znak srčane bolesti koji zaslužuju daljnju kardiološku evaluaciju.

Ključne riječi: srčana bolest, pedijatar, kardiolog

hypotension, any of these findings may represent a sign of heart disease meriting further evaluation.

Key words: heart diseases, paediatrician, cardiologist

UTICAJ INDEKSA TJELESNE MASE NA KONTROLU SIMPTOMA I PLUĆNU FUNKCIJU U DJECE OBOLJELE OD ASTME

Pašić Amela
Klinika za dječije bolesti,
Univerzitetski klinički centar Tuzla

Pretilost je hronični, multifaktorijalni, kompleksni poremećaj koji nastaje pod uticajem genetskih, metaboličkih, endokrinih i faktora okoline. U debljini nije samo povećana masa već je poremećena i funkcija masnog tkiva. Pretilost je bolest povezana sa sistemskom inflamacijom i povećanjem upalnih medijatora, koja može rezultirati hiperreaktivnošću disajnih puteva u pretilih osoba. Cilj istraživanja je bio utvrditi uticaj indeksa tjelesne mase na težinu bolesti, kontrolu simptoma i plućnu funkciju u djece oboljele od astme. Ispitanici i metode: Studijom je bilo obuhvaćeno 90 ispitanika liječenih na Klinici za dječije bolesti UKC Tuzla u vremenskom periodu od 1.5.2013. do 1.5.2014. godine. Ispitanici su bili podijeljeni u tri grupe: od 0 do 4,9, od 5 do 9,9 i od 10 do 15 godina, te u odnosu na vrijednosti ITM u 3 grupe: normalno uhranjeni, prekomjerno uhranjeni i gojazni. Djeca sa pretilošću bila su upućena endokrinologu radi dizajniranja dijete. Klinička i spirometrijska reevaluacija rađena je svaka 3 mjeseca tokom istraživanja. Rezultati: ACT je bio značajno viši u grupi ispitanika sa normalnom tjelesnom masom u odnosu na ostale dvije grupe ($p<0,001$). Statistički je bila znatno češća potreba za korištenjem olakšivača, posjeta službi

INFLUENCE OF BODY MASS INDEX ON CONTROL SYMPTOMS AND LUNG FUNCTION IN CHILDREN WITH ASTHMA

Amela Pasic
Clinic for Children's Diseases,
University Clinical Center Tuzla

Obesity is a chronic, multifactorial, a complex disorder which arises under the influence of genetic, metabolic, endocrine, and environmental factors. The thickness is not only the increased mass is already disturbed and function of adipose tissue. Obesity is a disease associated with systemic inflammation and an increase in inflammatory mediators, which can result in airway hyperresponsiveness in overweight people. The aim of the research was to determine the influence of body mass index on the severity of illness, control of symptoms and lung function in children with asthma. Patients and Methods: The study included 90 patients treated at the Clinic for Children's Diseases, UKC Tuzla in the period from 1.5.2013. to 01.05.2014. years. The subjects were divided into three groups: from 0 to about 4.9, from 5 to 9.9 and from 10 to 15 years, and with respect to the value of BMI in 3 groups: normal weight overweight and obese. Children with obesity were sent to an endocrinologist to design a child. Clinical and spirometric re-evaluation was performed every 3 months during the study. Results: ACT was significantly higher in the group of patients with normal-weight in relation to the

hitne medicinske pomoći i prijema u bolnicu u grupi gojaznih pacijenata. Poredeći vrijednosti spirometrijskih parametara na početku ispitivanja, učestalost urednog spirometrijskog nalaza je bIla značajno niža u grupi gojaznih ispitanika u poređenju sa ostale dvije observacione grupe (p<0,05), dok je na kraju ispitivanja obstruktivni poremećaj ventilacije bio podjednako distribuiran između observacionih grupa (p>0,05). Tiffenau index je imao podjednaku distribuciju vrijednosti prije i nakon istraživanja. Zaključak: S obzirom na složenost ovih oboljenja i mogućih dugoročnih strukturalnih promjena u plućima apsolutni imperativ u liječenju djece sa astmom i povećanim ITM je redukcija tjelesne težine što bi dovelo do bolje kontrole simptoma, bolje plućne funkcije i kvalitete života djece sa astmom.

Skraćenice: indeks tjelesne mase (ITM), astma control test (ACT)

Ključne riječi: pretilost, astma, djeca

other two groups (p <0.001). Was statistically significantly more frequent need to use reliever, visit emergency department and hospital admission in a group of obese patients. Comparing the values of spirometric parameters at the beginning of the test, the proper frequency of the spirometric findings was significantly lower in the obese subjects compared to the other two observational group (p <0.05), while on the end of the test obstructive ventilatory impairment was equally distributed between the groups of observation (p> 0.05). Tiffenau index had an even distribution of values before and after the study. Conclusion: In view of the complexity of the disease and long-term structural changes possible in the lungs of an absolute priority in the treatment of children with asthma increased BMI is weight reduction leading to a better control of symptoms, pulmonary function, and a better quality of life in children with asthma.

Abbreviatio n s: bod y mass index (BMI), Asthmaa control test (ACT)

Keywords: obesity, asthma, children

PERINATALNE OZLJEDE MOZGA

Darinka Šumanović Glamuzina
Klinika za dječje bolesti SKB Mostar

Perinjatalne ozljede mozga (POM) su patoanatomske promjene nastale prije, tijekom ili nakon rođenja djeteta.Mnoštvo je uzročnih čimbenika, a nekada je teško pretpostaviti ili preduhitriti nastanak takove katastrofe unatoč svem tehnološkom napretku u perinatologiji. Prevalencija POM se ocjenjuje ugrubo, manja je u razvijenim, a viša u nerazvijenim zajdnicama. Raste spoznaja da je prevencija,adekvatni neuroprotekcijski terapijski postupci i dobro razumijevan j e patofi zioloških mehanizama imperativ u zbrinjavanju ovakove djece. Anali-

PERINATAL BRAIN INJURY

Darinka Šumunović Glamuzina,
Clinic for Children's Diseases,
University Clinical Hospital Mostar, Mostar,
Bosnia and Herzegovina

Perinatal brain injuries (PBI) are a patoanatomical cha n ges tha t occur before birth, during the birth or after the birth of an infant. There are many causes, but sometimes it is difficult to foresee or to prevent the occurrence of such a disaster despite all recent advances in technology and perinatology. The prevalence of PBI is smaller in a developed countries, and higher in a less developed communities. There is a growing knowledge that

za pojavnosti POM u SKB Mostar u dva dvogodišnja razdoblja pokazuje da je prevalencija ovog kliničkog entiteta viša nego u ostalim dijelovima Europe (40/1000 novorođenih u razdoblju 2003-2004 te 30/1000 novorođenih u razdoblju 2011-2012.). Sve analize pojavnosti POM-a kako u našoj sredini tako i u ostalim sredinama, pokazuju da klinička simptomatologija POM-a snažno ovisi ne samo o uzročnim faktorima nego i o duljini njihova trajanja kao i o gestacijskoj zrelosti djeteta. Isto tako duljina trajanja neurološke disfunkcije može biti relativni prognostički faktor za daljnji ishod djeteta. Znaci encefalopatije koji se izgube unutar sedam dana od trenutka ozljede, dobar su prognostički marker kasnijeg neurološkog ishoda.U patofiziološkom smislu perinatalna hipoksija/ishemija ostaje glavni uzrok ozljede mozga novorođenčeta, a hipoksično ishemična encefalopatija (HIE) je njen glavni patoanatomski oblik. Stupanj težine HIE (tri stupnja po Sarnat/Sarnatu) odraz je težine ozljede moždanog tkiva. Destrukcija moždanog tkiva odvija se u više faza, a dvije su najvažnije i precizno patofiziološki ispitane i na animalnom ali i na humanom modelu perinatalne hipoksične ozljede. Prvi val ozljede je posljedica cerebralne anoksije i ishemije. Posljedica cerebralne ishemije je poremećaj neuronskih membranskih potencijala kojeg prati oslobađanje ekscitatornih aminokiselina (glutamat i aspartat). Glutamat se veže za postsinaptičke glutamat receptore koji reguliraju kalcijeve kanale. Rezultirajući influks kalcija aktivira snažno proteaze, lipaze i endonukleaze što u konačnici destruira citoskelet. Drugi val neuronalne stanične ozljede nastupa za vrijeme reperfuzijske faze. Ta nova stanična ozljeda uzrokovana je postishemičnim oslobađanjem kisikovih radikala, sintezom NO-a, upalnom reakcijom te neravnotežom eksitatornog i inhibitornog neurotransmiterskog sustava. Štoviše, sekundarna ozljeda mozga može biti posljedica i celularnog suicidalnom programa (tzv. apoptoze). Novije studije pokazuju da

prevention, adequate neuroprotective therapies and better understanding of particular pathophysiological mechanism might be imperative in the care of such children. The incidence of PBI in the University Clinical Hospital Mostar in the two two- year period is higher than the incidence of PBI in other parts of Europe (40/1000 newborns in the period 2003-2004 and 30/1000 newborns in the period 2011-2012).All analyses of PBI incidence both in our and other communities show that PBI clinical symptomatology strongly depends not only on a causal factors but also on their duration as well as on gestational maturity of the child. Likewise, the duration of neurological dysfunction may be a relative prognostic factor for the child's further outcome. The signs of encephalophaty that dissapear within seven days from the moment of injury are good prognostic marker for the subsequent neurological outcome. Pathophysiology of perinatal hypoxia/ ischemia remains the main cause of brain injury in newborn, and hypoxic ischemic encephalophaty (HIE) is its main patoanatomic form. The stage of HIE (the three stage categorization of HIE of Sarnat and Sarnat) is a reflection of the severity of brain tissue injury. The destruction of the brain tissue happens in several phases, but the two most important are precisely pathophysiologically tested both on the animal and human model of perinatal hypoxic injury. The first signs and symptoms are the cause of cerebral anoxia and ischemia. The consequance of cerebral ischemia is the disruption in the neuron's membrane potential followed by the release of excitatory amino acids (glucamate and aspartate). Glutamate binds to postsynaptic glutamate receptors that regulate calcium channels. The resulting calcium influx strongly activates proteases, lipases and endonucleases which ultimately destroys the cytoskeleton. This new celular injury is caused by the postischemical release of the oxygen radicals, NO synthases, the inflammatory reaction and

inflamatorne reakcije (kemokini i citokini) mogu uvećati sekundarnu neuronalnu ozljedu, ali mogu i direktno oštetiti nezreli mozak. To oštećenje je posredovano kardiovaskularnim efektom endotoksina koji vodi do cerebralne hipoperfuzije i sa aktivacijom apoptoze u oligodendrocitnim progenitorima kroz oslobađanje proinflamatornih citokina. Tipična lezija nezrelog mozga je periventrikularna i intraventrikularna hemoragija (PIVH). Ona je rezultat nemogućnosti prematurnog fetusa/ djeteta da redistribuira srčani izbačaj u centralne organe i rezultat sloma cerebralne autoregulacije. Posljedična fluktuacija cerebralne cirkulacije dovodi do hipoksije i ishemije moždanog tkiva gdje su vulnerabilna područja germinalnog matriksa najčešći lokusi cerebralne hemoragije i cerebralne hemoragične infarkcije. Razumijevanje tih patofizioloških mehanizama dovelo je do razvoja novih terapeutskih strategija za koje se pokazuje da su neuroprotektivne. Za sada je jedino terapijska hipotermija u djece sa umjerenom i teškom encefalopatijeom efektivan i širom prihvaćen postupak. Ali postoji potreba za dodatnim postupcima koji će poboljšati neuronalni oporavak nakon hipoksične ozljede.

the imbalance of the excitatory and inhibitory neurotransmitter system. Moreover, secondary brain injury can be the result of an intracellular self- destruction program (so- called apoptosis). Recent studies have shown that inflammatory reactions (chemokines and cytokines) may increase secondary neuronal injury, but also can directly damage the immature brain. That damage is mediated by the cardiovascular effect of endotoxin leading to cerebral hypoperfusion and the activation of apoptosis in oligodendrocyte progenitors through the release of proinflammatory cytoknes. A typical lesion of the immature brain is periventricular/ intraventricular hemorrhage (PIVH). It is the result of the inability of a preterm fetus/ child to redistribute heart ejection to central organs and the result of cerebral autoregulation failure. The consequent fluctuation of cerebral circulation leads to hypoxia and brain tissue ischemia where vulnerable areas of the germinal matrix are the most common locus of cerebral hemorrhage and cerebral hemorrhagic infarction. Deeper understanding of these pathophysiological mechanisms has led to the development of new therapeutic strategies that are proven to be neuroprotective. So far, only therapeutic hypothermia in children with moderate to severe ecephalophaty has shown to be effective and widely accepted. But, there is a need for additional procedures that will improve the recovery of the neurons after hypoxic injury.

KOMPLIKACIJE MEHANIČKE VENTILACIJE U DJECE

Devleta Hadžić
Klinika za dječije bolesti Tuzla,
JZU UKC UKC Tuzla

Mehanička ventilacija (MV) kod djece svih uzrasta ima svoje pozitivne ali nažalost i veliki broj potencijalno negativnih efekata, pogoto-

COMPLICATIONS WITH MECHANICAL VENTILATION IN CHILDREN

Devleta Hadžić,
Clinic for Children's Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Mechanical ventilation in children of all ages has its positive but unfortunately, many po-

vo ukoliko se neadekvatno primjenjuje. Vođenje djeteta na MV i ishod liječenja kompleksan je proces na koji utiče niz parametara od strane samog pacijenta ali i kvaliteta i odabranih opcija liječenja. S obzirom na stalni napredak u ovoj oblasti, kontinuirana edukacija i kritički pristup svih koji primjenjuju MV u liječenju djece je obavezujuća. Od samih početaka u 20. stoljeću pa do danas, primjena i strategije MV mijenjale su se paralelno s unapređenjem spoznaja o efektima primjene nefiziološkog pozitivnog pritiska u grudnom košu, kako na organe unutar njega, tako i na druge organske sisteme u tijelu. Primjena kod djece dodatno zahtijeva i dobro poznavanje plućne fiziologije u pojedinim fazama razvoja djeteta i patofoziološkog procesa koji uzrokuje respiratornu insuficijenciju. Danas je prilično veliki broj mogućnosti, strategija i modaliteta, što upućujući da još uvijek nismo kreirali idealni modus koji bi maksimalno udovoljio potrebama djeteta, ubrzao oporavak i minimizirao komplikacije. Budući da dužina primjene MV korelira s nastankom komplikacija, dužinom hospitalizacije i ishodom liječenja, stalna težnja je personalizirani pristup, pažljiv monitoring i što ranije odvajanje djeteta od MV. Cilj ovog rada je da iznese najčešće komplikacije povezane s primjenom mehaničke ventilacije u djece i mogućnosti njihove prevencije.

Ključne riječi: mehanička ventilacija, djeca, komplikacije

tentially negative effects, especially if it is applied inadequately. Management of MV in children, and outcome of treatment is a complex process influenced by a number of parameters, from the patient itself, but also from the selected treatment options and quality. Permanent education is mandatory for all who apply MV in children, given continued progress in this area. Since its beginnings in the 20th century until today, applications and strategies MV changing in parallel with improving knowledge of effects from non-physiological positive pressure in the chest, both on the organs inside it, and on other organic systems in the body. MV in children additionally requires a good knowledge of pulmonary physiology in different periods of child development, and pathophysiological process that causes respiratory failure. Currently, there are many options, strategies and modalities, suggesting that we still have not created ideal mode, which would maximally respond to needs of critically ill child, expedite recovery with minimal complications. Since the continuance of mechanical ventilation correlated with onset of complications, length of hospitalisation and outcome, the personalized approach is constant tendency, with careful monitoring and rapid weaning. The aim of this paper is to present the most common complications associated with mechanical ventilation in children and the possibility of their prevention.

Key words: mechanical ventilation, children, complications

HITNA STANJA U DJEČIJOJ

Admira Hadžiselimović
JZU UKC Klinika za dječije bolesti Tuzla

Dijagnostika i tretman djece s malignim bolestima, kao i sama bolest, nose sa sobom povećan rizik od brojnih komplikacija koje treba hitno prepoznati i rješavati kako ne bi nastupile neželjene posljedice, a nekad i smrtan ishod. Među hitnim stanjima u dječijoj onkologiji treba istaći hiperleukocitozu, sindrom lize tumora, hitna stanja u toraksu (sindrom gornje šuplje vene, pleuralni izljevi, pneumotoraks, pneumonitis, tamponada srca), u gastrointestinalnom traktu (mukozitis, ezofagitis, gastriris, duodenalni ulkus, enterokolitis, hepatitis, holecistitis, pankreatitis) u genitourinarnom traktu (uroinfekcije, hemoragijski cistitis) i neurološka hitna stanja (promjene stanja svijesti, konvulzije, epileptički napadi, cerebrovaskularni incidenti, kompresija kičmene moždine). Sve vrste infekcija kao i alergijske reakcije na citostatike i krvne derivate treba hitno rješavati. **Cilj rada:** Prikazati učestalost navedenih hitnih stanja u grupi od 17 pacijenata dobi od 0-15 godina, koji su liječeni u Odjeljenju za hematologiju i onkologiju u periodu od 01.01.2017.-31.12.2017.godine. **Materijal i metode:** Retrospektivno su analizirane historije bolesti i specijalistički izvještaji oboljele djece. **Rezultati:** U navedenom uzorku najzastupljenije su hemoblastoze (4 akutne limfoblastne leukemije, 1 Non Hodgkin lymphomom i 1 Hodgkin lymphomom). Na drugom mjestu su tumori centralnog nervnog sistema, ukupno troje djece, te ostali solidni tumori (neuroblastom, sarkomom bubrega, osteosarkomom po jedan pacijent) i 2 djece sa aplastičnom anemijom. Desetoro djece je liječeno hemoterapijom. U djece sa hemoblastozama hitno smo rješavali hiperleukocitozu uz sindrom lize tumora, tamponadu srca i akutnu renalnu insuficijenciju. Djeca s tumorima centralnog nervnog sistema imala su neurološke komplikacije tipa hidrocefalusa, promjene stanja svijesti, konvulzija, epileptičkih napada i respiratorne insuficijen-

EMERGENCIES IN PEDIATRIC ONCOLOGY

Admira Hadžiselimović
Clinic for Children's Diseases,
University Clinical Center Tuzla, Tuzla,
Bosnia and Herzegovina

Diagnosis and treatment of children with malignant diseases, as well as the illness itself, carry with them the increased risk of numerous complications that need to be urgently identified and resolved in order to avoid unwanted consequences and sometimes a deadly outcome. Emergency conditions in pediatric oncology include hyperleucocytosis, tumor lysis syndrome, thoracic emergencies (superior vena cava syndrome, pleural effusion, pneumothorax, pneumonitis, cardiac tamponade), gastrointestinal tract (mucositis, esophagitis, gastritis, duodenal ulceration, enterocolitis, hepatitis, holecistitis, pancreatitis) genitourinary tract (urinary tract infection, hemoragic cystitis) and neurological emergencies (altered mental status, convulsions, epileptic attacks, cerebrovascular accidents, spinal cord compression). All types of infections as well as allergic reactions to cytostatics and blood derivatives should be addressed urgently. **Aim:** To show the frequency of these emergencies in a group of 17 patients aged 0-15 who were treated in the Hematology and Oncology Department for the period from 01.01.2017. to 31.12.2017. **Material and Methods:** Patients medical history and medical specialist examinations of the children were retrospectively analyzed. **Results:** Hemoblastosis (four patients with acute lymphoblastic leukemia, one with Non Hodgkin lymphoma and one with Hodgkin lymphoma) are the most common in the aforementioned sample. Secondly, central nervous system tumors, total of three children, and other solid tumors (neuroblastoma, kidney sarcoma, osteosarcoma per patient) and two children with aplastic anemia. Ten children were treated with chemotherapy. In children with hemoblastosis, we urgently addressed hyperleukocytosis, tumor lysis syn-

cije. U pacijenta s aplastičnom anemijom dominirao je infektivni, hemoragijski sindrom uz sindrom neprikladne sekrecije antidiuretskog hormona. Šest pacijenata je uprkos tretmanu završilo letalnim ishodom. **Zaključak:** Iako se radi o relativno kratkom vremenskom periodu i manjem uzorku, prepoznali smo i na vrijeme terapijski rješavali najozbiljnija hitna stanja u **dječijoj onkologiji.**

Ključne riječi: dijete, malignitet, hitna stanja.

drome, cardiac tamponade and acute renal insuffi ciency. Children with central nervous system tumors had neurological complications such as hydrocephalus, changes in mental state, convul sions, epileptic attacks and respiratory insufficiency. The patient with aplastic anemia had infectious hemorrhagic syndrome with inappropriate secretion of antidiuretic hormone. Six patients ended their treatment with lethal outcome despite treatment. **Conclusion:** Although it is a relatively short period of time and a smaller sample, we have recognized and timely therapeutically solved the most serious emergencies in pediatric oncology.

Key words: child, malignancy, emergencies

HEMOFILIJA I LIJEČENJE

Edo Hasanbegović
Pedijatrijska klinika,
Klinički centar Univerziteta u Sarajevu

Hemofilija je nasljedni poremećaj nedostatka pojedinih faktora koagulacije, koji generalno aficira samo muške osobe, dok su osobe ženskog spola nosioci gena hemofilije. Ovisno koji faktor nedostaje, hemofilija se dijeli na hemofiliju A, uzrokovanu deficitom ili kvalitativnim poremećajem VIII faktora koagulacije, hemofiliju B koja se očituje u nedostataku IX faktora koagulacije i hemofiliju C kod koje nedostaje faktor XI koagulacije. To je najrjeđi tip hemofilije, karakteriziran blagim simptomima krvarenja. Kod jedne trećine slučajeva, hemofilija se javlja kao rezultat genetskih mutacija, nazvana sporadična hemofilija. Kliničke manifestacije variraju od vrlo rijetkih, urgentnih krvarenja kao što su krvarenja u CNS i kičmu, faringealna i retrofaringealna krvarenja do najčešćih epizoda krvarenja u zglobove. Terapija hemofilija A i B provodi se po načelu suspstitucione terapije

HEAMOPHILIA AND TREATMENT

Edo Hasanbegović
Paediatric Clinic, Clinical Centre University of Sarajevo, Sarajevo, Bosnia and Herzegovina

Haemophilia is a hereditary disorder, characterised by deficiency of certain coagulation factors, which generally affect only male subjects, while females are carriers of haemophilia genes. Depending on missing factor, haemophilia is divided into haemophilia A, caused by deficiency or qualitative impairment of coagulation factor VIII, haemophilia B, manifested in deficiency of coagulation factor IX and haemophilia C, lack of coagulation factor XI. This is the rarest type of haemophilia and is characterized by mild symptoms of bleeding. In one third of cases, haemophilia occurs as a result of genetic mutation and is called sporadic haemophilia. Clinical manifestations vary from very rare, urgent bleeding such as bleeding to CNS and spine, pharyngeal and retropharyngeal bleeding up to most common epi-

koncentratom faktora VIII i IX (koncentrati srednje i visoke čistoće, produkti pročišćeni monoklonalnim antitijelima te rekombinirani produkti). Pored ovih faktora u tretmanu se još koriste krioprecipitat i plazma, desmopresin (samo blage deficijencije F VIII) te antifibrinolitički faktori (Epsikapron i traneksamična kiselina). U sadašnjim uslovima ovi produkti se ne preporučuju osim u slučajevima opasnim po život i gdje ne postoji pristup koncentratima faktora najprije zbog potencijalne opasnosti virusnih oboljenja, izuzetak je hemofilija C jer nema koncentrata koji sadrže F XI. Osnovni princip terapije hemfilije je prevencija krvarenja, koju postižemo redovnom primjenom faktora koagulacije-profilaksom. Razlikujemo primarnu-davanje faktora prije razvoja oštećenja i sekundarnu-davanje faktora nakon pojave oštećenja zgloba ili nakon pojave drugih krvarenja. Ciljevi profilaktičkog liječenja su: spriječiti ponavljana krvarenja u zglobove, odložiti nastanak deformiteta i invaliditeta te poboljšati kvalitet života. Kućno liječenje je najbrži, nejefikasniji i ekonomski najprihvatljiviji način liječenja krvarenja. Terapija budućnosti je genska terapija gdje bi se "zdravi" gen uveo u ciljane ćelije putem genetički modifikovanih virusa ili tzv. vektora. Hronične komplikacije hemofilije dijelimo u komplikacije liječenja-pojava antitijela na faktore VIII i IX tzv. Inhibitori te muskulo-skeletne komplikacije-oštećenje zglobova i sinovitis.

Ključne riječi: hemofilija A, B i C, faktor koagulacije VIII, IX i XI, profilaksa

sodes of bleeding in joints. Haemophilia A and B are treated with factor VIII and IX suspensory therapy (concentrates medium and high purity, monoclonal antibody purified products and recombinant products). In addition it can be used cryoprecipitate and plasma, desmopressin (only in mild F VIII deficiency) and antifibrinolytic factors (Epsicapron and tranexamic acid). Currently, these products are not recommended except in life-threatening cases and where there is no access to factors concentrates primarily due to the potential risk of viral disease. Exception is haemophilia C because no factor XI concentrates exist. The basic principle of haemophilia therapy is bleeding prevention, which is achieved by regular application of factor concentrates-prophylaxis. There are two types of prophylaxis: primary-giving factor concentrates prior to damage and secondary-giving factors after joint injury or some other bleeding. The goals of prophylactic treatment are to prevent repeated bleeding in the joints, postpone deformity and disability and improve the quality of life. Home treatment is the fastest, most efficient and economically most acceptable method of bleeding treatment. Genetic therapy is therapy of the future, where "healthy" gene is introduced into target cells via genetically modified viruses or so-called vectors. Complications of chronic haemophilia are divided into complications of treatment-producing antibodies to coagulation factors VIII and IX so-called inhibitors and muscle-skeletal complications-joint damage and synovitis.

Key words: Haemophilia A, B and C, coagulation factor VIII, IX and XI, prophylaxis.

NASLJDNI POREMEĆAJI METABOLIZMA KAO IZAZOV U KLINIČKOJ PRAKSI – OD RACIONALNE DIJAGNOSTIKE DO PRAVE DIJAGNOZE

Mensuda Hasanhodžić
Univerzitetski klinički centar Tuzla, Klinika za dječije bolesti, Odjeljenje za endokrinologiju, bolesti metabolizma i genetiku, Tuzla, Bosna i Hercegovina

Bolesti koje nastaju kao rezultat poremećaja metabolizma u procesu pretvaranja hrane u energiju na ćelijskom nivou nazivaju se metaboličke bolesti. One utiču na sposobnost ćelije da izvodi kritične biohemijske reakcije koje uključuju obradu ili transport proteina (aminokiselina), ugljenih hidrata (šećera i škroba) ili lipida (masnih kiselina). Hiljade enzima učestvuju u brojnim međusobno zavisnim metaboličkim putevima u ovom procesu. Metaboličke bolesti su pojedinačno uglavnom rijetke, ali su kao grupa relativno česte. Imaju učestalost od 1 na 500 u izolovanim populacijama do manje od 1 na 1.000.000 u ostalim populacijama. Kao grupa, metabolički poremećaji utiču na 1 od 1.000 osoba u općoj populaciji. Većina bolesti metabolizma su urođene i nasljedne, iako neke pogođene osobe, prije kliničkog ispoljavanja bolesti, mogu dugo izgledati zdravo. To se posebno odnosi na bolesti odlaganja. Prvi simptomi se obično javljaju kada se metabolizam u organizmu nalazi pod stresom nakon produženog gladovanja ili tokom febrilnosti. Bolesti koje se očituju u ranom neonatalnom periodu imaju ozbiljniji klinički tok. Racionalna dijagnostika metaboličkih bolesti započinje jednostavnim laboratorijskim testiranjem, nastavlja se specifičnim metaboličkim i funkcionalnim testovima, a često se završava složenim genetičkim testovima. Terapija metaboličkih bolesti može biti simptomatska, dijetalna, etiološka ili genska. Neke bolesti dobro reaguju ako se tretman uvede u ranoj dobi, druge nemaju efikasnu terapiju i izazivaju ozbiljne probleme, uprkos ranoj dijagnozi. U prikazima slučajeva

HEREDITARY DISORDERS OF METABOLISM AS A SHALLENGE IN CLINICAL PRACTICE - FROM RATIONAL DIAGNOSTICS TO APPOPRIATE DIAGNOSIS

Mensuda Hasanhodžić
University Clinical Center Tuzla, Hospital for children diseases, Department of endocrinology, metabolic diseases and genetic, Tuzla, Bosnia and Herzegovina

Diseases that arise as a result of metabolic disorders in the process of converting food into energy at the cellular level are called metabolic diseases. They affect the ability of the cell to perform critical biochemical reactions involving processing or transporting proteins (amino acids), carbohydrates (sugar and starch) or lipids (fatty acids). Thousands of enzymes participate in a number of mutually dependent metabolic pathways in this process. Metabolic diseases are individually rare, but are relatively common as a group. They have a frequency of 1 to 500 in isolated populations to less than 1 per 1,000,000 in large populations. As a group, metabolic disorders affect 1 in 1,000 people in the general population. Most metabolic diseases are inborn and hereditary, although some affected people may look healthy for a long time before clinical manifestations of the disease. This particularly applies to some storage diseases. The first symptoms usually occur when metabolism in the body is under stress after prolonged famine or during febrile illness. Diseases that appear in the early neonatal period have a more serious clinical course. Rational diagnostics of metabolic diseases begins with simple laboratory testing, continues with specific metabolic and functional tests, and often ends with complex genetic tests. The therapy of metabolic diseases can be symptomatic, dietary, etiological or genetic. Some diseases respond well if treatment is introduced at an early age, others do not have effective therapy and cause serious problems, despite early diagnosis. In the case

naših pacijenata, mi smo predstavili pacijente s različitim metaboličkim poremećajima. Oni su dijagnostikovani kao gangliosidoza GM1; gangliosidoza GM2; Niemann-Pickova bolest; Gaucherova bolest, mitohondrijalni poremećaji kao metilmalonska acidemija/acidurija sa ili bez homocistinurije, deficit enzima enoil-CoA-hidrataze kratkih lanaca, deficit alfa 1 antitripsina i Wilsonova bolest. Sva djeca su imala zdrave roditelje, a bili su dijagnosticirani i liječeni u Dječijoj bolnici Univerzitetskog kliničkog centra Tuzla, Bosna i Hercegovina. U zaključku smo naglasili da je cilj ovog članka podijeliti znanje o metaboličkim bolestima svim pedijatrima i pomoći im u odabiru racionalnih laboratorijskih pretraga sa svrhom što ranijeg otkrivanja metaboličkog poremećaja. Većina rijetkih metaboličkih bolesti još nema efektivnu terapiju. Postupci kao što su enzimska zamjenska terapija, farmakološki prenosioci, terapija redukcije supstrata, terapija nervnim matičnim ćelijama ili genska terapija postaju opcija za mnoge od ovih poremećaja.

Ključne riječi: metabolizam, dijagnostika, pacijenti, terapija

reports of our patients, we presented patients with various metabolic disorders. They have been diagnosed as GM1 gangliosidosis; gangliosidosis GM2; Niemann-Pick disease; Gaucher disease, mitochondrial disorders such as methylmalonic acidemia / aciduria with or without homocystinuria, deficit of enzymes of enoyl-CoA-hydratase enzymes, deficit of alpha 1 antitrypsin and Wilson's disease. All children had healthy parents and were diagnosed and treated at Children's Hospital of the University Clinical Center Tuzla, Bosnia and Herzegovina. In conclusion, we pointed that the goal of this article is to share a knowlege on metabolic diseases and, to help to all pediatricians in the selection of rational laboratory tests for the purpose of early detection of metabolic diseases. Some of rare metabolic diseases have effective therapy, but not all of them. Procedures such as enzymatic substitution therapy, pharmacological chaperons, substrate reduction therapy, neural stem cell therapy or gene therapy become an option for many of these disorders.

Kays word: metabolism, diagnostics, patients, therapy

ZDRAVSTVENI ISHOD NOVOROĐENČADI ZAČETIH U POSTUPKU VANTJELESNE OPLODNJE

Igor Hudić
Klinika za ginekologiju i akušerstvo,
Univerzitetski klinički centar Tuzla,
Bosna i Hercegovina

Prema posljednjim istraživanjima smatra se da 15% parova ima problem sa fertilnošću, dok je oko 1,5% djece rođeno u postupku vantjelesne oplodnje (IVF). Od 1978. godine kada je urađen prvi uspješan postupak IVF-a, dra-

HEALTH OUTCOME OF CHILDREN BORN AFTER IVF/ ICS METHODS

Igor Hudić
Clinic for Gynecology and Obstetrics,
University-Clinical Centre Tuzla,
Bosnia and Herzegovina

Approximately 15% of couples experience infertility and fertility treatments are on the rise, with in vitro fertilization (IVF) contributing to 1.5% of live births. Since the birth of the first IVF-conceived child in 1978, the

matično je porasla upotreba medicinski potpomognute oplodnje (MPO) sa oko 5 miliona porođaja u svijetu. Bez obzira na povećanje broja živorođene djece u postupku MPO još uvijek je dosta kontroverzi i pitanja o zdravstvenom ishodu djece začete u postupku MPO. Analizirajući dostupnu literaturu nije nađena povećana učestalost anomalija ploda kod djece začete u postupcima MPO u poređenju sa djecom začetih prirodnim putem. Djeca rođena postupcima MPO imaju manju porođajnu masu i veću količinu subkutanog masnog tkiva, viši krvni pritisak te višu učestalost poremećaja u metabolizmu glukoze ali rast, razvoj i kognitivne funkcije su bez razlike u odnosu na prirodno začetu djecu. Čini se da općenito ne postoji direktna veza između postupaka MPO i zdravlja djeteta. Uzroci nekih razlika u zdravstvenom ishodu djece začetih postupcima MPO mogu biti povezani za starosti majke koje se podvrgavaju postupcima MPO.

use of assisted reproductive technologies (ART) has grown dramatically, contributing to the successful birth of 5 million individuals worldwide. Whether this is attributed to ART procedures or to the subset of the population seeking ART remains a controversy, but the most relevant question today concerns the potential long-term implications of assisted conception. The researchers discovered no increased risk in birth defects in assisted-conception children compared with naturally conceived children. They found that IVF-conceived children have lower birth weights and higher fat under the skin, higher blood pressure and higher fasting glucose concentrations than naturally conceived children; however, growth, development and cognitive function are similar between groups. A very low risk of disorders of genetic control was observed in assisted-conception children. Overall, there did not appear to be a direct link between assisted reproduction treatment and children's health. The cause of some differences in the health of children conceived using assisted reproduction treatment may be due to the age of the woman receiving treatment.

UROGENITALNA REKONTRUKTIVNA DJEČIJA HIRURGIJA: DILEME I KONTROVERZE

Konjić Elvira
Dječija hirurgija UKC Tuzla

Urogenitalna rekonstruktivna dječija hirurgija je veoma široka oblast koja podrazumijeva hiruršku rekonstrukciju kongenitalnih anomalija kao što su anomalije vanjskih genitalija, hipospadije, epispadije, ekstrofija mokraćne bešike, interseks. Ova subpecijalnost hirurgije nije registrovana bilo gde u svijetu kao poseb-

UROGENITAL RECONTRUCTIVE PEDIATRIC SURGERY:DILEMMAS AND CONTROVERSIES

Elvira Konjić
Clinic for Children's Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Urogenital recontructive pediatric surgery is a very broad area that includes surgical recontruction of congenital anomalies such as anomalies external genitalia, hypospadias, epispadias, bladder extrophy, intersex. This subscpeciality of surgery is not registered anywhere in the world as a special subspeciality,

na subspecijalnost, ali se značajan broj hirurga (urologa, dječijih hirurga, dječijih urologa, plastičnih hirurga) obrazuje za ovu specifičnu oblast. Edukaciju kontrolira i usmjerava Sekcija urogenitalnih rekonstruktivnih urologa (ESGURS) pri Evropskom udruženju urologa – EAU (European Association of Urology). Glavne odlike urogenitalne rekontruktivne dječje hirurgije su dugotrajna edukacija iz ove oblasti, usvajanje novih tehnika i njihovim varijacijama, te nemogućnost standardizacije. U ovoj hirurgiji je potrebna velika prilagodljivost i visoko individualizovan pristup svakoj anomaliji koja se rekonstruiše s strukturalnog, funkcionalnog i estetskog aspekta. Mnoge tehnike su opisane i veliki broj različitih varijacija za svaku tehniku, ali nijedan od njih nije idealna za sve slučajeve. Uprkos sve većem broju publikacija na ovu temu, preporuke zasnovane na dokazima i dalje ne mogu biti učinjene. Trend u medicini je standardizacija tehnika i postupaka, ali nešto što ima mnogo varijacija nemoguće je standardizirati. Stoga postoje brojne dileme i kontroverze u urogenitalnoj rekontruktivnoj dječijoj hirurgiji kao što su: kada i kako rješavati problem, u kojoj životnoj dobi, koju hiruršku tehniku primijeniti i sl. Kako god, neke od ovih dilema ćemo prezentirati kroz ovaj rad.Ciljevi ovog rada su ukazati na respektabilno mjesto dječije hirurgije UKC Tuzla u ovoj oblasti, dati pregled raznih hirurških postupaka od 1998. do 2018., te pregled indikacija za pojedine tehnike. Opisani su kratkoročni rizici i koristi pojedinih procedura, te diskutovani dostupni dugotročni rezultati.

but a significant number of surgeons (urologists, pediatric's surgeons, pediatric's urologists, plastic surgeons) are educated for this specific area. Education is managed and controlled by the Section of Urogenital Reconstructive Urology (ESGURS) at the European Association of Urology - EAU (European Association of Urology). The main features of urogenital recontructive pediatric surgery are long term education of new specific techniques and their variations, and the impossibility of standardisation. This surgery requires great flexibility and a highly individualized approach to any anomaly reconstructed from a structural, functional and aesthetic aspect. Many techniques have been described and a large number of different variations for each technigue but none represents the ideal one for all cases. Despite the increasing number of publications on this topic, evidence-based recommendations still cannot be made. The trend in medicine is the standardization of techniques and procedures, but something that has many variations can not be standardized. Therefore, there are numerous dilemmas and controversies in urogenital reconstructive pediatric surgery such as: when and how to solve the problem, in which age, the surgical technique applied, and so on. However, we will present some of these dilemmas through this work.The aims of this paper are to present a respectable place for children's surgery UKC Tuzla in this field, to give an overview of the variety of surgical procedures from 1998. to 2018. and in what situation a particular technique would be indicated. The short-term risks and benefits are described and where available long-term outcome data is discussed.

EPIDEMIOLOGIJA ZLOĆUDNIH TUMORA DJEČIJE DOBI

Latifagić Amila, Hadžiselimović Admira,
Dostović Hamidović Lejla
JZU UKC Tuzla, Klinika za dječije bolesti

Zloćudne bolesti u djece su rijetke, s udjelom od 1% svih neoplazmi u opštoj populaciji. Pedijatrijske neoplazme bitno se razlikuju od neoplazmi u odraslih po prognozi, histološkom tipu i lokalizaciji. Rak je drugi po učestalosti uzrok smrtnosti djece u svijetu, a zabilježena incidenca ima tendenciju povećanja s vremenom. Postoje značajne varijacije incidence kako za pojedine vrste tumora u različitim populacijama tako i među zemljama u svijetu . Primjećeno je da se u Evropi stopa incidence poveća za 1.1% godisnje, dok je petogodišnja stopa preživljavanje i do 84% za Evropu, a slični su podaci i za SAD. Prema podacima međunarodne klasifikacije raka djece leukemije čine 34%, tumori mozga 23% i limfomi 12% neoplazmi kod djece mlađe od 15 godina. Najčešće pojedinačne dijagnoze su akutna limfoblastna leukemija, astrocitomi, neuroblastomi, non Hodgkin limfomi i nefroblastomi. Liječenje djece sa zloćudnim bolestima je vlo kompleksno i potebno ga je povoditi u specijaliziranim pedijatrijskim onkološkim odjeljenjima, gdje radi posebno obrazovano medicinsko osoblje.

Ključne riječi: zloćudni tumori, djeca, epidemiologija

EPIDEMIOLOGY OF CHILHOOD CANCER

Amila Latifagić, Admira Hadžiselimović,
Lejla Dostović Hamidović,
Clinic for Children's Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Malignant diseases in children are rare, with a share of 1% of all neoplasms in the general population. Pediatric neoplasms differ significantly from neoplasms in adults by prognosis, histological type and localization. Cancer is the second most common cause of child mortality in the world, and the incidence of the incidence tends to increase over time. There are significant variations in incidence for certain tumor types in different populations as well as among countries around the world. It has been noted that in Europe the rate of incidence is increasing by 1.1% per year, while the five-year survival rate is up to 84% for Europe, and are similar for the USA. According to the International Classification of Cancer Leukemia children account for 34%, brain tumors 23% and lymphoma 12% neoplasms in children under 15 years. Most commonly diagnosed are acute lymphoblastic leukemia, astrocytoma, neuroblastoma, non-Hodgkin's lymphoma and nephroblastoma. The treatment of children with malignant diseases is complex and has to be relegated to specialized pediatric oncology departments, where specially trained medical staff work.

Key words: childhood cancer, epidemiology

PROFILAKSA RSV INFEKCIJE PALIVIZUMABOM U CRNOJ GORI

Envera Lekić, Draško Nikčević,
Slađana Radulović
Univerzitetcki Klinički Centar Crne Gore,
Institut za bolesti djece, Centar za neonatologiju,
Podgorica, Crna Gora

Cilj: U našoj zemlji je tokom protekle decenije postignut značajan napredak u liječenju novorođenčadi, uključujući i djecu rođenu prije 32. nedelje gestacije tjelesne mase < 1500 g, i < 1000 g. Poznato je da ovu visokorizičnu po mnogo čemu specifičnu grupu djece , tokom prve godine života karakteriše visoka osetljivost na infekciju respiratornim sincicijalnim virusom.Tada se i prema našem iskustvu često može očekivati težak tok i nepovoljan ishod bolesti, čime se umanjuje ukupan napredak , kao i efekti ulaganja u zdravstvenu zaštitu novorođenčadi. Zato je zacrtani cilj uvođenja profilakse protiv RSV infekcije uspješno implementiran u Crnoj Gori i sprovodi se 4 zimske sezone. **Metod:** Observaciona studija , koja je obuhvatila djecu u visokom riziku za RSV infekciju u Crnoj Gori, a dobijala palivizumab u sezoni od 2014/2015 godine do 2017/2018 godine. **Rezultati:** Tokom 4 RSV sezone od 2014/2015 do 2017/2018 u profilksi RSV infekcije palivizumabom uključeno je 73 djece (0, 24% od ukupng broja živorođenih u Crnoj Gori u periodu 2014-2018). Od ukupno 73 djece , 46 (63,1%) su djeca rođena pretermina , 13 (17,8%) djeca sa bronhopulmonalnom displazijom/hronična plućna bolest (BPD/CLD) , 8 (10,9%) djece sa urođenom srčanom manom , 4 (5,5%) djece sa anomalijom disajnih puteva 1 (1,4%) dijete sa cistična fibrozom i 1 dijete (1,4%) sa neuromišićnom bolešću. 59 (80,8 %) djece je bilo ≤ 32 prosječne gestacijeske starosti, a u grupi sa BPD/CLD 27,5 ±2,5 nedjelja gestacija. Prosječan broj doza palivizumaba je 4,2±1.0. Hospitalizacju sa teškom RSV infekcijom jedinici intenzivne terapije (PJIT) tokom perioda profilakse sa palivizumabom nijesmo eviden-

PALIVIZUMAB PROPHYLAXIS OF RSV INFECTION IN MONTENEGRO

Envera Lekić, Draško Nikčević,
Slađana Radulović
University Clinical Center of Montenegro,
Institute for Sick Children, Center for
Neonatology, Podgorica, Montenegro

Introduction: Significant progress has been made in our country over the past decade in the treatment of newborns, including infants born before the 32nd week of gestation and birth weight below <1500 g and <1000 g. It is known that this specific group of infants in high risk in many ways, during the first year of life, is characterized by a high susceptibility to infections of respiratory syncytial virus. Then, according to our experience, it is often possible to expect a severe course and adverse outcome of the disease, which reduces overall progress and effects investments in health care for newborns. Therefore, the intended goal of introducing prophylaxis against RSV infection has been successfully implemented in Montenegro and it has been in action for the last four winter season. **Methods:** Observational study, which included infants at high risk for RSV infection in Montenegro, and received palivizumab in the season from 2014/2015 to 2017/2018. **Result:** During the 4 RSV season from 2014/2015 to 2017/2018, 73 infants were included in the prophylaxis of RSV infection with palivizumab (0, 24% of the total number of live births in Montenegro in the period 2014-2018). Out of a total of 73 children, 46 (63.1%) were infants who were born preterm, 13 (17.8%) children with bronchopulmonary dysplasia / chronic lung disease (BPD / CLD), 8 (10.9%) children with congenital heart disease , 4 (5.5%) children with anomalies of respiratory system, 1 (1.4%) with cystic fibrosis and 1 child (1.4%) with neuromuscular disease. 59 (80.8%) infants were ≤ 32 of the average gestational age, and in the group with BPD / CLD 27.5 ± 2.5 weeks of gestation. The av-

tirali, respiratorne infekcije imalo je 3 (4,1%) djece na ambulantnom tretmanu. **Zaključak:** Kod djece koja su primila imunoprofilaksu primjećeno je odsustvo postvakcinalnih komplikacija, kao i izostanak hospitalizacije zbog teške RSV infekcije u PJIT.

Ključne riječi: RSV profilaksis, palivizumab, preterm newborn,CLD/BPD, CHD,CDH

erage number of palivizumab doses is 4.2 ± 1.0. Hospitalization with severe RSV infection of the Intensive Therapy Unit (PJIT) during the prophylaxis period with palivizumab was not recorded, 3 (4.1%) infants had respiratory infections in outpatient treatment. **Conclusions:** Infants who received immunoprophylaxis, there was a lack of post-vaccination complications, as well as absence of hospitalization due to severe RSV infection in PJIT.

Key words: RSV prophylaxis, palivizumab, preterm newborn, CLD / BPD, CHD, CDH

GINEKOLOŠKI TUMORI U ADOLESCENTMOM PERIODU ; DESETOGODIŠNJE ISKUSTVO

Dženita Ljuca[1]
[1]Klinika za ginekologiju i akušerstvo, Univerzitetsko klinički centar Tuzla, Bosna i Hercegovina

Uvod: Genitalni tumori u prve dvije decenije života nisu česti i čine 5-10 % svih tumora. S obzirom na nedostatak istraživanja za ovu dobnu skupinu, cilj nam je bio opisati epidemiološke karakteristike ginekoloških tumora tijekom adolescencije. **Metode:** Desetogodišnji retrospektivni pregled mladih od 10 do 19 godina koji su bili upućeni i operisani na Klinici za ginekologiju i akušerstvo, Univerzitetsko kliničkog centra Tuzla u razdoblju od januara 2008. do decembra 2017. godine. **Rezultati:** Korištenjem medicinske evidencije identificirali smo 58 adolescenata s ginekološkim tumorima. Maligni tumori dijagnosticirani su u 5 (9%) pacijenata, benigni tumori dijagnosticirani u 48 bolesnika, maligni tumori malih potencijala u 2 bolesnika i prekancerozne lezije za karcinom grlića maternice u 3 bolesnika. **Zaključak:** Najčešći ginekološki tumori u adolescenciji u našem desetogodišnjem iskustvu su tumori jajnika s visokim procentom malignih tumora.

GYNECOLOGIC TUMORS DURINGADOLESCENCE; 10-YEARS EXPERIENCE

Dženita Ljuca[1]
[1]Clinic for Gynecology and Obstetrics, University Clinical Center Tuzla, Bosnia and Herzegovina

Objective. Genital tumors during the first two decades of life are not common and they constitute 5-10% of all tumors. Given the lack of research for this age group our objective was to describe the epidemiologic characteristics of gynecologic tumor during adolescence. **Methods.** A ten year retrospective file review adolescents between the ages of 10-19 years, who were referred to and operated at the Clinic for Gynecology and Obstetrics, University Clinical Center Tuzla durig period from January 2008 to December 2017. **Results:** Using medical records we identified 58 adolescents with gynecological tumors. Furthermore, malignant tumors diagnosed in 5 (9%) patients, benign tumors diagnosed in 48 patients, low malignant potential tumors in 2 patients and precancerous lesions for cervical cancer in 3 patients. **Conclusion:** Our study concluded that the most common gynecological tumors in adolescence in our 10 years experience are ovarian tumors with the high procente of malignat tumors.

INTERGRATIVNA BIOETIKA I PEDIJATRIJA

Mladina Nada

Ženevska deklaracija Svjetske zdravstvene organizacije ističe da: "zdravlje mog pacijenta uzeću prvo u obzir ". Medjutim, dvojna uloga dječijeg ljekara, praktičara i medicinskog profesionalca odvlači u različitim pravcima i predstavlja obje sukobljenom obavezom i sukobom interesa. Stoga, u medicini i u pedijatriji trebamo primjeniti bioeticki pristup. Filozofij, kao humanistička naučna disciplina preuzima sve više ulogu „nove moralne orjentacije„ u sagledavanju i rješavanju dilema "posljedica utjecaja naučno tehnološkog napretka u medicini. Filozofija je problematizirala odnos prema ljudskom tijelu i dijagnostičkim postupcima liječenja i njege. Moral vrednuje, određuje kriterije razlikovanja dobra i zla, prosuđivanja odluka o tome što treba, a što ne treba činiti. Tehnološki napredak i primjena savremene tehnologije u medicini je pored pozitivnih rezultata po pitanju većeg i dužeg preživljavanja unio i niz pitanja koja nadilaze granice medicine kao znanosti .Šta sa istinom o prognozi bolesti i neizljecivosti kod djeteta? Poznavati bolesti, simptome, njihov nastanak , otklanjati bol, pomagati bolesnima, igrati korisnu ulogu u ljudskoj zajednici – dovoljni su motivi kojima, naizgled, ne treba nikakvo objašnjenje ni opravdanje. Svaka profesionalna djelatnost odgovara necem podsvjesnom u onome tko je obavlja. Male su razlike u tom pogledu medju raznim profesijama. Razlikuju se samo putovi i oblici izražavanja . Što se nazire i što se zadovoljava , zapravo , iza izvjesnih racionalnih motiva izbora liječničke profesije? Obavljanje liječničkog posla zahtijeva priličnu koliicnu znanstvenih znanja, a spoznaja sadrži jedno unutarnje zadovoljstvo koje svako ne može osjetiti. Može se reći da je radost spoznaje anticipacija zadovoljstva koje će liječnik imati kad bude liječio svoje pacijente. To je osjećanje mnogo intenzivnije od jednostavnog intelektualnog zadovoljstva. Ono ima

INTEGRATIVE BIOETHICS AND PEDIATRICS

Mladina Nada

The Declaration of Geneva of the World Medical Association affirms that „the health of my patient will be my first considearation „But, dual roles child's phisician, practitioner and medical professional pull in different directions and present both conflicting obligations and conflicting interests.Therefore, we must apply bioethical approach in medicine and pediatrics.Philosophy, as humanistic scientific discipline is taking over more and more the role of „ new moral orientation „ in solving and identifing consequencies of scientific technical progress in the field of medicine. Philosophy debates and discussis relationship to human body and diagnostic steps considering treatment and care. Moral evaluate worth, determin criterions of differentiate well from evil, judging decisions about what to do, and wath to avoid , not to do. Technical imrovement and application of current technology in the field of medicine did some very positive results considering biger and longer survival rate and also made an entry of big number of questions wich overrate the bounderies of medicine as a scinece. Knowing diseases, symptoms, their origin, eliminating pain, helping sick children, play very useful role within human community are sufficient motives which do not need any explanations or excuse .Every professional activity corresponds to something in the subconscious of whoever is doing it. Concerning this, differences between various professions are small. Only the ways and forms of expressions are different. What is looming and what is satisfied, in fact, behind certain rational motives for choosing medical profession? Performing medical vocation demands a huge amount of scientific knowledge, and knowing contains an internal satisfaction that everyone must feel. We could say that the joy of knowing

karakter uživanja i to osobnog uživanja koje nadilazi, ne iskljucujuci u pravilu, altruisticko zadovoljstvo sto se osjeća pri pomaganju drugima. No, šta je sa našim pozivom i našim osjećajima i odgovornosti kada se nadjemo licem u lice sa neizljecivom bolesti kod djeteta ? Kako iznevjeriti njegova ocekivanja od nas njegovih pomagaca, a da izbjegnemo laž? Da li reći istinu do kraja i kome? To su dileme koje imaju svoju znanstvenu, emocionalnu i svaku drugu težinu i bioeticko propitivanje.

Ključne riječi: bioetika,pedijatrija , dijete

is the anticipation of pleasure that the physician will feel while treating his patients. That feeling is much more intensive then simple intellectual pleasure. It has a character of enjoyment, I mean a personal enjoyment which overmatch, without strictly excluding, altruistic pleasure one can feel helping the others. But, what happens with our profession and our feelings and responsibility when we find ourselves face to face with incurable disease at child? What can we do not to forsake his expectation from us, his helpers, avoiding a big lie? Tell the truth or not, tell the truth to whom? Those are dilemmas with its own scientific, emotional and any other weight and, of course, bioethical enquire about.

Key words: bioethics, pediatrics, child

NJEGA PUPKA KOD NOVOROĐENČETA: RAZLIČITI PRISTUPI U KLINIČKOJ PRAKSI (PREGLED LITERATURE)

Selma Muratović
Klinika za ginekologiju i akušerstvo, univerzitetski klinički centar Tuzla, Tuzla, Bosna i Hercegovina

Mortalitet i bolesti vezane za infekcije pupčanika postale su rijetka pojava u visoko razvijenim zemljama ali su u značajnom postotku prisutne u zemljama u razvoju.Devitalizirana pupčana vrpca idealan je supstrat za razvoj bakterija te pruza odlican put za sirenje infekcije u krvotok novorođenčeta. Bakterijska kolonizacija cesto dovodi do omfalitisa i pridruzenog tromboflebitisa, celulitisa i nekrotizirajuceg fascitisa. Koja je najbolja praksa antisepse u postupku obrade pupka, ostaje kontraverzno i promjenjivo pitanje, cak i u zemljama sa visoko razvijenom tehnologijom i resursima koji pruzaju relativno asepticne uslove za vrijeme poroda. Pregled dosadasnje

UMBILICAL CORD CARE : DIFFERENT APPROACH IN CLINICAL PRACTICE (REVIEW)

Selma Muratović
Clinic for Gynecology and Obstetrics, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Morbidity and mortality related to umbilical cord infections have become rare in developed countries but they are still significant in developing countries. The devitalized umbilical cord often proves to be an ideal substrate for bacterial growth and also provides direct access to the bloodstream of the neonate. Bacterial colonization of the cord frequently leads to omphalitis and associated thrombophlebitis, cellulitis, or necrotizing fasciitis. Best practices for antisepsis of the umbilical cord are controversial and variable, even in high-resource countries with relatively aseptic conditions at the time of delivery. Review of current evidence on umbilical cord care compares two most common ways of care: dry cord care

literature na temu njege pupcanika u najvecem broju slucajeva poredi dva najcesca nacina njege: suha metoda njege pupcanika nasuprot tretman sa antiseptickim sredstvima. Suha metoda obrade pupcanika bez apliciranja topikalnih supstanci preferira se u visoko razvijenim zemljama dok se kod novorođenčadi rođenih u vanbolnickim uvjetima sa visokom stopom neonatalne smrtnosti preferira topikalna aplikacija chlorhexidina. Infekcije pupcanika su preventabilne u vecini slucajeva, pa je vazno da se ustanovi koja je to najbolja klinicka praksa u ovom slucaju da bi se reducirao neonatalni morbiditet i mortalitet uzrokovan neonatalnom sepsom.

Ključne riječi: pupčanik, neonatalna njega, chlorhexidin

versus treatment with antiseptics. Dry cord care without the application of topical substances is preferable under most circumstances in high-resource countries in-hospital births while the application of topical chlorhexidine is recommended for infants born outside the hospital setting in communities with high neonatal mortality rates. Umbilical cord infections should be preventable in most cases so it is important to identify best cord care practices to reduce neonatal mortality and morbidity caused by neonatal sepsis.

Key words: umbilical cord, neonatal care, chlorhexidine, dry cord care

TEŠKA MIOKLONA EPILEPSIJA RANOG DJETINSTVA: DRAVET SINDROM

Nevzeta Mustafić, Mensuda Hasanhodžić, Amela Numanović
Klinika za dečije bolesti Univerzitetsko-klinički centar Tuzla, Bosna i Hercegovina

Dravet sindrom (DS) je teška forma epilepsije koja počinje u ranom djetinstvu a karakteriše ga refraktarni epileptički napadi i neurorazvojna regresija. Prvi put je opisana 1978. godine od strane francuskog doktora Charlotte Dravet kao teška mioklona epilepsija dječije dobi, a 2001. godine je otkrivena mutacija u genu SCN1A te mijenja naziv po autoru u DS. Klasificiran je kao genetski epileptički sindrom i epileptička encefalopatija. Bolest počinje u prvih 36 mjeseci života, kao generalizovani toničko-klonički napadi, fokalni napadi ili hemikonvulzije, u febrilnom ili afebrilnom stanju, isprovociran infekcijom, promjenom temperature ili treptanjem svjetla. Javlja su u djece koja su do tada imala potpuno uredan psihomotorni razvoj. Povećanje broja napada

SEVERE MYOCLONIC EPILEPSY OF CHILDHOOD: DRAVET SYNDROME

Nevzeta Mustafić, Mensuda Hasanhodžić, Amela Numanović,
Clinic for Children's Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Dravet syndrome (DS) is a severe form of epilepsy that begins in early childhood and is characterized by refractory epileptic attacks and subsequent mental decline. It was first described in 1978 by French Doctor Charlotte Dravet as a severe myoclonic epilepsy of childhood, and in 2001 a mutation in the SCN1A gene was detected and the name changed to DS. It is classified as genetic epileptic syndrome and epileptic encephalopathy. The disease begins in the first 36 months of life, such as generalized tonic-clonic attacks, focal attacks or hemiconvulsions, in a febrile or afebrile condition, proven by infection, temperature change, or blinking of light. They were in children who had until then had a completely normal devel-

različite semiologije, česti epileptički statusi, refraktarnost na postojeće antiepileptike, razvoj epileptičke encefalopatije (moždana disfunkcija), praćeno je pojavom ataksije, kognitivnim oštećenjem i poremećajem ličnosti, te dodatnim komplikacijama od strane drugih organskih sistema. Postavljanje dijagnoze je kliničko a potvrda genetskim testiranjem. Cilj ovog rada je, kroz prikaz slučaja, hronološki, predstaviti kliničke karakteristike, tok bolesti i komplikacije koje se javljaju kod ove teške i za sada još ne izlječive bolesti.

Ključne riječi: Dravet sindrom; Kliničke karakteristike; Komplikacije bolesti.

opment. Increased number of attacks of different semiology, frequent epileptic status, refractory to existing antiepileptics, development of epileptic encephalopathy (brain dysfunction), followed by ataxia, cognitive impairment and personality disturbances, and additional complications by other organic systems. Diagnosing is a clinical and genetic testing. The aim of this paper is to present chronologically the clinical characteristics, the course of the illness and the complications occurring in this difficult and not yet healing disease.

Key words: Dravet syndrome; Clinical characteristics; Complications of the disease.

17 GODINA ISKUSTVA SA NUSS PROCEDUROM

Nešad Hotić, Edin Husarić, Amir Halilbašić
Univerzitetski klinički centar Tuzla, BiH

Cilj: Cilj studije je bio da se istraže i prikažu rezultati minimalne invazivne procedure za Pextus excavatum u Univerzitetskom kliničkom centru Tuzla. **Metode:** U ovu studiju je uključeno 125 pacijenata sa pectus excavatumom, starih između 9 i 19 godina koji su liječeni sa minimalno invazivnom procedurom za pectus excavatum (Nuss procedura) u našoj instituciji u periodu od 1999 – 2017. godine. Operativni protokol je bio jednak za sve pacijente. Svi pacijenti su preoperativno imali izračunat Hallerov indeks (3.41 (3.0 – 7.66)) Svi su tretirani Nuss procedurom Postoperativno su pacijenti klinički praćeni radigrafski radi praćenja položaja šipke. **Rezultati:** Ženskih pacijenata je bilo 25 (20%), a 100 (80%) muškog spola. Prosječno trajanje operativnog zahvata je iznosilo 45±15 min. Fizička aktivnost je bila limitirana za prosječni period od 6 mjeseci postoperativno. Uklanjanje implantata je bilo planirano i rađeno nakon perioda od 2 +/- 1 godine. Komplikacije su uključivale pneumo-

17 YEARS OF EXPERIENCE WITH NUSS PROCEDURE

Nešad Hotić, Edin Husarić, Amir Halilbašić
Clinic for Children's Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Aim: The aim of the study was to investigate and present the results of minimal invasive procedure for Pectus excavatum (Nuss procedure) in University clinical center Tuzla. **Methods:** This study included 125 patients with pectus excavatum, aged between 9 and 19 years treated with minimal invasive procedure for pectus excavatum (MIRPE) in our institution in period 1999 – 2017. The operation protocol was the same for all patients. All patinets had Haller index (3.41 (3.0 – 7.66)) calculated before surgery. All was treated with Nuss procedure. Postoperatively patients are clinically monitored radiographically for bar placement assesment. **Results:** In study were 25 female patients (20%) and 100 (80%) male patients. Average operative time was 45±15 min. Hospital stay was average 5 days. Physical activities was limited for ≈ 6 weeks. Implant removal was planed after period of 2 +/- 1 year. Complication

torax kod 13 (10,4%), hemothorax kod 4 (3,2%), kasna dislokacija šipke kod 5 (4%), infekcija rane kod 6 (4,8%), alergija na metalnu šipku kod 3 (2,4%) i recidiv kod 2 (1,6%) pacijenta. Kod 80 pacijenata je testiran kvalitet života. **Zaključci:** Minimalno invazivna procedura za Pextus excavatum predstavlja sigurnu, efektivnu i minimalno invazivnu metodu liječenja pectus excavatuma kod djece koja reducira patnju djeteta, trajanje medikamentoznog tretmana i smanjuje troškove liječenja.

Ključne riječi: Pectus excavatum, minimal invasive procedure

included PNTX resolved spontaneously at 13 (10,4%), hemothorax at 4 (3,2%), late bar dislocation 5 (4%), wound infection 6 (4,8%), allergy to metal bar 3 (2,4%) and recidiv 2 (1,6%). In 80 patients was conducted testing of quality of life. Conclusion:Minimal invasive procedure for pectus excavatum (MIRPE) is a safe, effective and minimally invasive method of treating Pectus excavatum in children that reduces the child's suffering, duration of medication treatment, and reduces the cost of treatment.

Keywords: Pectus excavatum, minimal invasive procedure

PRIMJENA BIOLOŠKE TERAPIJE U DJEČIJOJ DOBI

Belkisa Čolić-Hadžić
Klinika za dečije bolesti Univerzitetsko-klinički centar Tuzla, Bosna i Hercegovina

Uvod: Biološki lijekovi se sve više primjenjuju u djece sa reumatskim bolestima, osobito u teškim oblicima Juvenilnog idiopatskog artritisa (JIA). **Cilj rada:** je da se prezentiraju rezultati primjene monoklonskim antitijelima na Klinici za dječije bolesti Univerzitetko kliničkog centra (UKC) Tuzla. **Materijal i metode:** U periodu od 01. 06.2007.do 31. 12. 2016. godine na Klinici za dječije bolesti UKC Tuzla, liječeno je 87. pacijenta u kojih je primjenjena terapija monoklonskim antitijelima. Pacijenti su bili oba spola, dobi od 1.2 do 17.4. godine života. **Rezultati:** Pacijenti (87), u kojih je postavljena indikacija za primjenom biološke terpije, u navedenom pediodu, bili su iz cijele BiH. Bilo je 47 (56.3%) ženskog i 38 (43.7%) muškog spola. Dob djece se kretala od 1.2 do 17.4 godine života (X 7.9 g ± 3.7). Iz Tuzlanskog kantona bila su 44 (50.6%) pacijenta, ostalih kantona F BiH 25 (28.7%), Republike srpske 10 (11.5%) i Distrikta Brčko 8 (9.2%). U terapiji su primjenjivani adalimumab u 57

APPLICATION OF BIOLOGICAL THERAPY IN CHILDHOOD

Belkisa Čolić-Hadžić,
Clinic for Children's Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Introduction: Biological drugs are increasingly being used in children with rheumatic diseases, especially in severe forms of Juvenile Idiopathic Arteritis (JIA). **The aim** of this paper is to present the results of monoclonal antibiotics in the University Clinical Center (UKC) Tuzla Clinic for Children's Diseases. **Material and Methods:** In the period from 01. 06. 2007. until 31. 12. 2016, at the Clinic for Children's Diseases UKC Tuzla, 87 patients were treated with monoclonal antibiotics. Patients were both sexes, ages 1.2 to 17.4. year of life. **Results:** Patients (87), in whom an indication for the application of biological therapy was placed in the pediatrician, were from all over BiH. There were 47 (56.3%) females and 38 (43.7%) males. The age of children ranged from 1.2 to 17.4 years (X 7.9 g ± 3.7). Of the Tuzla Canton, 44 (50.6%) were patients, the other cantons F BiH 25 (28.7%), Republika Srpska 10 (11.5%) and Brčko District 8 (9.2%). In therapy, adalimumab was

(65.6%), infliximab 24 (26.6%), tocilizumab 3 (3.%) i etanercept 3 (3.4%) pacijenta. Oboljenja u kojih su primjenjivana monoklonska antitijela su JIA u 72 (80.9%), Dermatomioitis 6 (6.8%), Sindrom aktivacije makrofaga (MAS) u 3 (3.4%), Ankilozantni spondilitis u 4 (4.7%), Cronova bolest 1 (1.1%) i Simpatička oftalmia u 1 (1.1%) pacijenta. Teže nuspojave aplikacije lijeka (infliximab) imala su 2 (2.3%) pacijenta (tuberkulozni meningitis). Ishod liječenja: oporavljenih 65 (74.8%), trenutno na terapiji je bilo 15 (17.2%), pogoršanje u 5 (5.7%) a 2 (2.3%) pacijenta sa letalnim ishodom (MAS) unutar 24 sata od hospitalizacije. **Zaključak:** učinkovitost rane primjene biološke terapije, dugoročno posmatrano je isplativa, jer većina djece rijetko dočeka odraslu dob s aktivnim artitisom i znatnom invalidnošću.

Ključne riječi: monoklonska antitijela, terapija, dijete.

administered in 57 (65.6%), infliximab 24 (26.6%), tocilizumab 3 (3%) and etanercept 3 (3.4%) patients. Diseases in which monoclonal antibiotics were administered were JIA in 72 (80.9%), Dermatomioitis 6 (6.8%), Macrophage Activation Syndrome (MAS) in 3 (3.4%), Ankylosing Spondylitis in 4 (4.7 %), Cron's disease 1%) and Sympathic ophthalmia in 1 (1.1%) patients. Severe adverse drug reactions (infliximab) had 2 (2.3%) patients (tuberculous meningitis). Treatment outcome: 65 (74.8%) recovered, 15 (17.2%) were currently on therapy, 5 (5.7%) and 2 (2.3%) outbreaks in air (MAS) within 24 hours of hospitalization. **Conclusion:** The effectiveness of early application of biological therapy, in the long term, is cost-effective, as most children rarely experience adulthood with active arthritis and significant disability.

Keywords: monoclonal antibiotics, therapy, child.

FETALNI I NEONATALNI MOZAK: MOGUĆNOSTI NEUROPROTEKCIJE

Heljić Suada
Pedijatrijska klinika, Klinički Centar Univerziteta u Sarajevu

Fetalni mozak je vulnerabilan i podložan ozljedama što može rezultirati širokim spektrom neurorazvojne onesposobljenosti kod preživjele djece. Studije na kliničkim i animalnim eksperimentalnim modelima pokazale su da priroda fetalne neuropatologije zavisi od prirode i težine inzulta, kao i gestacijske dobi fetusa u vrijeme inzulta. Fetalna hipoksemija, bilo akutna zbog okluzije pupkovine ili hronična zbog neadekvatne placentne funkcije smatra se glavnim uzrokom perinatalne lezije mozga. Drugim značajnim etiološkim faktorom smatra se maternalna ili intrauterina infekcija/inflamacija. Postoje dokazi da inducirana tera-

FETAL AND NEONATAL BRAIN: POSSIBILITIES OF NEUROPROTECTION

Suada Heljić
Paediatric Clinic, Clinical Centre University of Sarajevo, Sarajevo, Bosnia and Herzegovina

Fetal brain is vulnerable and succeptible to lesions which can result in a range of developmental disabilities. Studies of the brain of both humans and experimental animals show that the nature of the fetal neuropathology depends on: the nature of insult, severity of the insult and gestational age of the fetus at the time of the insult. Severe fetal hypoxemia, either acutely by umbilical cord occlusion or more chronically due to impaired placental function is widely considered to be a major factor underlyng brain injury. The other major factor is now thought to be maternal or intrauterine infection/inflammation. There

pijska hipotermija značajno poboljšava stopu preživljavanja i neurorazvojnih sekvela terminske novorođenčadi sa umjerenom do teškom hipoksično-ishemičnom encefalopatijom u dobi 18 mjeseci, što perzistira do školske dobi. Međutim, terapijska hipotermija nudi samo smanjenje rizika smrtnosti i onesposobljenosti i pri tom zahtjeva visok nivo podrške intenzivne njege koji nije dostupan u sredinama sa nedovoljno resursa. Osim toga, ona je preporučena samo za terminsku djecu, dok za sada nema prihvaćene terapije za ozljedu mozga prijevremeno rođene djece. Zbog toga postoji hitna potreba da se razviju dodatne, jednostavne, sigurne i efikasne neuroprotektivne strategije. Eksperimenti su danas usmjereni prema kombiniranoj, sinergističkoj strategiji terapijske hipotermije i farmakoloških agensa. Veliki je broj prekliničkih i kliničkih studija na potencijalnim neuroprotektivnim agensima: eritropoetin, melatonin, plemeniti gas ksenon, magnezijum sulfat, matične ćelije.., mada, osim terapijske hipotermije, za sada nijedan od njih nije zvanično odobren i prepororučen. Konačni cilj neuroprotekcije bi bio da se sistemskom primjenom farmakološkog agensa koji prolazi kroz hematoencefalnu barijeru postigne uspješno obnavljanje odgovarajućeg razvojnog potencijala i funkcije mozga, mada je postizanje tog cilja još uvijek daleko.

Ključne riječi: Fetalni i neonatalni mozak, Ozljeda mozga, neuroprotekcija

is clinical evidence that moderate induced hypothermia significantly improves survival and disability, including cerebral palsy and neurocognitive outcomes, in full-term infants with moderate to severe hypoxic–ischemic encephalopathy (HIE) at 18 months of age, which persists into middle childhood. But herapeutic hypothermia offers only an reduction in risk of death or disability and requires a high level of neonatal intensive care support which is not available in many lower resource settings. There is currently no accepted therapy for brain injury in preterm infants. So, there is an urgent need to develop additional simple, safe and effective neuroprotective treatment strategies. Experiments are now being directed towards combined synergistic neuroprotective strategies of hypothermia and pharmacological agents to improve neurological outcomes. Summary of preclinical and clinical studies on promising neuroprotective agents shows that the most promising agents are: erythropoietin, melatonin, xenon, magnesium sulphate, stem cells.., although, beside therapeutic hypothermia, none of them is not approved and recommended for now. The ultimate goal would be to have systemic pharmacologic aget which can cross the blood brain barrier, and be successful in restoring appropriate brain development and function, but this goal is still far away.

Key words: Fetal and neonatal brain, Brain damage, Neuroprotection

ULOGA PEDIJATRA U RANOM PREPOZNAVANJU POREMEĆAJA MENTALNOG ZDRAVLJA

Remetić M[1]. Kurbasić M.[2]
JZNU Dom zdravlja „Dr Mustafa Šehović“, Dispanzer za predškolsku djecu, Tuzla
2Division of General Pediatrics , University of Louisville, Louisville, Kentucky, USA

Cilj rada bio je utvrditi da li pedijatri u primarnoj zdravstvenoj zaštiti mogu uočiti efekte nepovoljnih ranih iskustava na dječije ponašanje, uzimajući u obzir naučnu činjenicu da rana iskustva, bilo pozitivna ili negativna, imaju direktan uticaj na razvoj mozga i stvaranje sinapsi važnih za proces učenja. Metode: U junu 2008. godine, u Dispanzeru za predškolsku djecu, anketirali smo 110 slučajno odabranih majki 53 dječaka i 57 djevojčica uzrasta od 4 do 7 godina. Pokušali smo utvrditi koliko su prisutni klinički značajni internalizirajući i eksternalizirajući ponašajni problemi u predškolskom uzrastu i koji su bili prediktivni faktori za njihovu pojavu. Korišten je upitnik za roditelje Test za ocjenu dječijeg ponašanja, forma za uzrast od 4-18 godina (CBCL). Rezultati: Internalizirajući ponašajni problemi (povučenost, somatski problemi, anksiozno depresivno ponašanje) i ukupni problemi bili su statistički značajno više prisutni u djece koja su imala zdravstvene probleme u perinatalnom periodu, hronične bolesti i česte hospitalizacije, dok su eksternalizirajući problemi (agresivno i opoziciono prkosno ponašanje) bili češći u djece čije su majke, prema sopstvenoj procjeni, bile potištene i depresivne. Zaključak: S obzirom na to da se mnogi rani ponašajni i emocionalni problemi nastavljaju i u poznom djetinjstvu i adolescenciji, njihovu tvrdokornost i nekada nedostatak efikasnog tretmana, uloga pedijatra je važna u prepoznavanju rizične djece i njihovom upućivanju na dalji tretman.

Ključne riječi: rana iskustva, ponašajni i emocionalni problemi

THE ROLE OF PEDIATRICIAN IN EARLY DETECTION OF MENTAL HEALTH DISORDERS

Remetic M1.Kurbasic M.2
1Primary Care Center for Preschool Children, Health Center “Dr. Mustafa Šehović”
2Division of General Pediatrics , University of Louisville, Louisville, Kentucky, USA

The objective of the study was to determine whether primary care level pediatrician would be able to detect the effects of unfavorable early experiences on child behavior knowing that early experiences whether positive or negative, have a direct impact on the development of brain and the creation of synapse that are important for learning process. METHODS: In June 2008, we surveyed 110 randomly selected mothers of 53 boys and 57 girls age 4 to 7, to determine presence of clinically significant behavioral problems in preschool age, and which factor would be predictive for their existence . We used The Child Behavior Checklist (CBCL), a parent-report questionnaire for ages 4-18 years. Results: Internalizing behavioral problems (withdrawal, somatization, anxiety and depression) and overall cumulative problems were statistically more often present in children with history of medical problems in perinatal period, chronic diseases and frequent hospitalizations. Externalizing problems (aggressive and oppositional defiant behavior), were more common in children whose mothers regarded themselves as depressive and sad. CONCLUSION: Many early behavioral problems would continue into late childhood and adolescence, and often could be difficult to treat. It is important to recognize potential early risks and implement early interventions to prevent consequent and more severe behavioral problems.

Key words: early experiences, behavioral and emotional problems

SOCIJALNI ASPEKT I MULTISEKTORSKI PRISTUP U BORBI PROTIV DIJABETESA I NJEGOVIH KOMPLIKACIJA

Diana Štimjanin-Koldžo, Edina Pepić Kapidžić, Emina Karčić
Kantonalna bolnica Zenica Odjel pedijatrije

„Dijabetes je hronično, isrpljujuće i skupo oboljenje koje je povezano sa teškim komplikacijama koje predstavljaju teško opterećenje za porodice, države članice i cijeli svijet uopšte, i ozbiljna je prijetnja za dostizanje međunarodno planiranih ciljeva razvoja, uključujući i Milenijumske razvojne ciljeve“, glavna poruka Rezolucije o dijabetesu UN 61/225. Osobe sa dijabetesom mogu odigrati odlučujuću ulogu u borbi protiv ovog tihog ubice ako imaju prava i odgovornosti da budu ravnopravni partneri sa pružaocima zdravstvenih usluga. Osobe sa dijabetesom imaju ista ljudska i građanska prava kao osobe koje nemaju dijabetes. Osobe sa dijabetesom imaju prava na ranu dijagnozu i dostupan i pravedan pristup njezi i liječenju bez obzira na rasu, etničku pripadnost, pol, životnu dob, uključujući pristup psihosocijalnoj podršci. Osobe sa dijabetesom i njihovi roditelji ili staratelji imaju prava na informacije i edukaciju o dijabetesu, uključujući i to kako se on spriječava, kakve su prednosti od ranog otkrivanja dijabetesa kod osoba koje su u riziku, kako se dijabetes može efikasno kontrolisati i kako se može pristupiti edukaciji i liječenju. Osobe sa dijabetesom imaju pravo na socijalnu pravdu da budu punopravni članovi društva, cjenjeni i poštovani od svih bez osjećanja da je potrebno da prikriju činjenicu da imaju dijabetes. Osobe sa dijabetesom imaju obavezu da podjele informacije o svom aktuelnom stanju zdravlja, svojoj terapiji koju uzimaju, alergijama, socijalnomo statusu, stilu života. Dijabetes je problem koji svi treba da rješavamo. Borbu protiv dijabetesa i komplikacija dijabetesa potrebno je voditi i izvan zdravstvenog sistema. Javne i privatne institucije, udruženja, privredna društva,obrazovne institucije,

SOCIAL ASPECT AND MULTISECTORAL APPROACH IN THE FIGHT AGAINST DIABETES AND ITS COMPLICATIONS

Diana Štimjanin-Koldžo, Edina Pepić Kapidžić, Emina Karčić
Cantonal Hospital Zenica, Department for Pediatrics, Zenica, Bosnia and Herzegovina

“Diabetes is a chronic, exasperating and costly illness that is associated with severe complications that pose a heavy burden on families, Member States and the entire world in general, and is a serious threat to the achievement of internationally-designed development goals, including the Millennium Development Goals,” the main message of Resolution or diabetes UN 61. People with diabetes can play a decisive role in fighting this silent killer if they have the rights and responsibilities to be equal partners with providers of health services. People with diabetes have the same human and civil rights as non-diabetic people. People with diabetes have the right to early diagnosis and accessible and just access to care and treatment regardless of race, ethnicity, gender, age, including access to psychosocial support. People with diabetes and their parents or guardians have rights information and education about diabetes, including how it is prevented, what are the benefits of early detection of diabetes in people at risk, how diabetes can be effectively controlled, and how education and treatment can be accessed. Persons with diabetes are entitled to social justice to be full-fledged members of society, valued and respected by all without feeling that it is necessary to conceal the fact that they have diabetes. Persons with diabetes are obliged to share information about their current state of health, their therapy, allergies, social status, and lifestyle. Diabetes is a problem that we all need to solve. Combating diabetes and diabetes complications should also be run out of the health system. Public and private institutions, associations, businesses, education-

mediji ,udruženja osoba sa dijabetesom,nevladin sektor, sportska udruženja i klubovi,socijalna politika,legislativa se moraju udružiti i multisektorskim pristupom pristupiti borbi protiv dijabetesa i komplikacija bolesti.

Ključne riječi: dijabetes, prava osoba, pristup liječenju

al institutions, media, diabetes associations, non-governmental sector, sports associations and clubs, social policy, legislation must also join the multisectoral approach to fight against diabetes and complications of illness.

Key words: diabetes, the right of people, access to treatment

BILIJARNA ATREZIJA

Selma Terzić, Lejla Osmančević
Odjeljenje gastroenterologije, Klinika za dječije bolesti, UKC Tuzla

Bilijarna atrezija je jedan od uzroka konjugovane hiperbilirubinemije (holestazna žutica) novorođenčadi i dojenčadi i značajan uzrok morbiditeta i mortaliteta najranijeg uzrasta. Incidenca abnormalnosti je različita u pojedinim regionima i procjenjuje se na 1:8000 do 1:14000 živorođene djece. Često je udružena (oko 25% djece) sa drugim anomalijama različitih organa i organskih sistema među kojima su najčešči nedostatak donje vene kave ili vene porte, situs inversus, crijevne malrotacije kao i ventrikularno septalni defekt. Bilijarna atrezija je progresivna fibroinflamatorna holangiopatija koja rezultira kompletnom uništavanju cijelog ili dijela ekstrahepatičnog bilijarnog stabla u roku od nekoliko sedmica. Opstrukcija dovodi do poremećaja protoka žuči, reaktivne proliferacije intrahepatičnih žučnih kanala, hronične holestaze i trajnog hepatocelularnog oštećenja. Većini dojenčadi se dijagnoza postavlja kada su već prisutni klasični znaci obstrukcije - izražena žutica, aholične stolice i hepatomegalija. Osnovni zadatak je razlikovati bilijarnu atreziju od drugih oblika neonatalne holestaze: pravovremena dijagnoza je od vitalnog značaja jer je rana hirurška intervencija- hepatoportoenterostomija jedini način za pokretanje protoka žuči. Nakon

BILIARY ATRESIA

Selma Terzić, Lejla Osmančević
Department for Gastroenterology, Clinic for Children Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Biliary atresia is one of the causes of congenital hyperbilirubinemia (holistic jaundice) of infants and significant cause of morbidity and mortality of the earliest age. The incidence of abnormalities is different in some regions and is estimated at 1: 8000 to 1: 14,000 live-born children. It is often associated with about 25% of children with other anomalies of various organs and organic systems, among which the most common deficiency is the lower veins of the cave or vein porte, situs inversus, intestinal malformation, and ventricular septal defect. Biliary atresia is a progressive fibroinflammatory holangiopathy that results in complete destruction of the whole or part of an extrahepatic billiard tree within a few weeks. Obstruction leads to bile duct disorders, reactive proliferation of intrahepatic bile ducts, chronic holestasis, and permanent hepatocellular damage. Most infants are diagnosed when there are already classic signs of obstruction - pronounced jaundice, achious stools and hepatomegaly. The basic task is to distinguish the bilious atresia from other forms of neonatal cholestasis: timely diagnosis is of vital importance because early surgical intervention - hepatoportoenterostomy is the only way to initiate bile flow. After surgery, intrahe-

operacije, intrahepatična bolest napreduje po promjenjivim stopama, a moguće je poboljšanje dugoročnog ishoda. Ako se dijagnoza odgađa i u nedostatku hirurške intervencije, trajno oštećenje dovodi do bilijarne ciroze, portne hipertenzije i jetrene insuficijencije. U ovoj fazi, transplantacija jetre je jedina terapeutska opcija za dugoročni opstanak, što čini 40-50% svih transplantacija jetre u dječijoj dobi.

Ključne riječi: konjugovana hiperbiliribinemija, bilijarna atrezija, hepatoportoenterostomija, transplantacija

patic disease progresses at variable rates, and it is possible to improve long-term outcomes. If the diagnosis is delayed and in the absence of surgical interventions, permanent damage results in billiary cirrhosis, portal hypertension and liver insufficiency. At this stage, liver transplantation is the only therapeutic option for long-term survival, which accounts for 40-50% of all liver transplants in childhood.

Key words: conjugated hyperbilirubinemia, biliary atresia, hepatoportoenterostomy, transplantation

ENDOKRINI POREMEĆAJI U DJECE ROĐENE MALE ZA GESTACIONU DOB

Toromanović Alma, Selimović Selma
Klinika za dječije bolesti, Univerzitetski klinički centar Tuzla, Tuzla

Oko 5% djece se rađa malo za gestacionu dob (MGD). Definicija pojma djeteta malog za gestacionu dob označava dijete rođeno s porođajnom masom i/ili porođajnom dužinom koja odstupa više od 2 SD ispod prosjeka TT odnosno TD novorođenčadi iste gestacijske dobi i pola u određenoj populaciji. Neovisno o tome da li su ta djeca rođena u terminu ili prije termina, većina djece MGS pokaže nadoknađujući rast do druge godine života i dostigne normalnu visinu. Međutim, procjenjeno je da oko 10% djece MGD ostaju niska (visina ispod -2 SD) tokom djetinjstva. Ako se ne liječe, ta djeca ostaju niska i na njih otpada oko 20% odraslih osoba čija je visina 2 SD ispod prosječne. U djece koja ostanu niska nakon druge godine života, tretman rekombinantnim humanim hormonom rasta je povezan sa značajnim ubrzanjem linearnog rasta što rezultira konačnom visinom unutar normalnog raspona određene populacije. Djeca rođena

ENDOCRINE DISORDERS IN CHILDREN BORN SMALL FOR GESTATIONAL AGE

Alma Toromanović, Selma Selimović
Clinic for Children Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Approximately 5% of children are born small for gestational age (SGA). SGA is defined as birth weight and/or lenght at least 2 SD below the mean for gestational age and gender in a specific population. Independently of whether these children are born prematurely or at term, most SGA infants experience postnatal growth sufficient to normalize their height by 2 years of age. This growth is referred to as catch-up growth. However, it is estimated that approximately 10% of SGA children remain short (height below -2 SD) throughout childhood. This cohort of adults who were born SGA and who have persistent growth retardation comprise 20% of the total population of short-statured adults. In children who remain short after 2 years of age, treatment with recombinant human growth hormone is associated with significant acceleration of linear growth, resulting in adult height within the normal range for their population. Chil-

MGD imaju visok rizik za kasniji razvoj metaboličkih poremećaja, gojaznosti, dijabetesa, i kardiovaskularnih oboljenja. Djeca rođena MGD su sklonija pojavi prematurne pubarhe i adrenarhe, ranijem počeku puberteta, ranijoj pojavi menarhe i bržoj progresiji puberteta. Tokom postmenarhalnog perioda djevojčice rođene MGD su izložene većem riziku razvoja sindroma policističnih jajnika. U odrasloj dobi, žene rođene MGD imaju smanjenu fertilnost i tokom trudnoće su izložene većem riziku preeklampsije i gestacionog dijabetesa. Komponente testikularnog disgenetičkog sindroma (kriptorhizam, tumor testisa, abnormalna spermatogeneza, hipospadija) češće se javljaju u dječaka rođenih MGD. Djeca rođena MGD su izložena povećanom riziku razvoja endokrinih i metaboličkih poremećaja. Stoga je važno rano postavljanje dijagnoze djece rođene MGD, kao i pravovremeno upućivanje na endokrinološku evaluaciju.

Ključne riječi: endokrini poremećaji, djeca rođena mala za gestacionu dob, nizak rast

dren born SGA are at higher risk of developing metabolic disorders, obesity, diabetes and cardiovascular diseases. SGA children are more prone to have precocious pubarche and exaggerated precocious adrenarche, an earlier onset of pubertal development and menarche, and faster progression of puberty. During the post-menarcheal periog SGA girls are at increased risk of developing polycystic ovary syndrome. In adulthood, women born SGA can have reduced fertility, and during pregnancy they are at a higher risk of preeclampsia and gestational diabetes. Each of the components of testicular dysgenesis syndrome (cryptorchidism, testicular cancer, impaired spermatogenesis, hypospadias) is significantly more common in children and adults born SGA. SGA children can manifest different endocrine and metabolic disorders. Early diagnosis of SGA and early referral for endocrine evaluation are needed.

Key words: endocrine disorders, children born small for gestational age, short stature

DVANAESTOGODIŠNJE ISKUSTVO U TRANSKATETERSKOM ZATVARANJU DEFEKTA NA PRETKOMORSKOJ PREGRADI PRIMENOM AMPLATZEROVOG UREĐAJA

Vukomanović Vladislav, Košutić Jovan, Prijić Sergej, Ninić Sanja, Popović Saša, Kuburović Vladimir, Jovičić Boska, Stajević Mila, Šehić Igor, Dizdarević Ivan
Institut za zdravstvenu zaštitu majke i dete Srbije "Dr Vukan Čupić", Beograd, Srbija

Uvod: Defekt na pretkomorskoj pregradi (ASD) čini 10% svih urođenih srčanih mana. Ostium sekundum je najčešći tip ASD (75%). Zatvaranje ASD može da bude transkatetersko i hirurško. Prednost transkateterskog zatvara-

TWELVE-YEAR EXPERIENCE IN THE TRANSCATHETER CLOSURE OF ATRIAL SEPTAL DEFECT USING THE AMPLATER'S DEVICE

Vladislav Vukomanović, Jovan Košutić, Sergej Prijić, Sanja Ninić, Saša Popović, Vladimir Kuburović, Boska Jovičić, Mila Stajević, Igor Šehić, Ivan Dizdarević
Mother and Child Health Institute "Dr Vukan Čupić" Belgrade, Serbia

Introduction: Atrial septal defect (ASD) accounts for 10% of all congenital heart defects. Ostium secondum type is the most common type of ASD (75%). ASD can be closed percutaneosly or surgically. The advantage of transcatheter closure is due to shorter hospitalization, less frequency of infections and

nja je zbog kraće hospitalizacije, manje učestalosti infekcija i proceduralnih komplikacija i manjih troškova intervencije. Amplatzerov uređaj za zatvaranje ASD (ASO) je dvostruki samootvarajući disk povezan „strukom“, čiji promer određuje veličinu (4mm-38mm). **Bolesnici i metodologija:** Od januara 2005. do 2017., kod 146 bolesnika (65 devojčica, 75 dečaka) urađena je procedura transkateterskog zatvaranja ASD primenom ASO. Pre procedure uzeta je anamneza, obavljen klinički pregled, EKG, rendgenogram srca i pluća i ehokardiografski pregled, a zatim su ispitivanja ponovljena neposredno posle intervencije, 15-30 dana, 3-6 meseci i 12 meseci posle intervencije. Zabeležene su i evaluirane komplikacije nastale u toku intervencije i u jednogodišnjem periodu praćenja. **Rezultati:** Uzrast bolesnika je bio od 3,5 do 17,5 godina (prosečno 7,5 godina), TM od 15,5kg - 68kg. Defekt tipa sekundum imalo je 96 bolesnika (66%), dva i više defekata 12 (7,5%), aneurizmu u fosi ovalis 6 (4%), deficijentnan retroaortni rub 22 (15,5%), sa deficijentni posteriorni rub i ka šupljim venama 10 (7%). Intervencije su rađene po standardnoj proceduri. Izmeren je statički dijametar defekta i upoređen po veličini sa „sizing“ dijametrom balona: 13,5 ± 6,2mm (max 26mm) vs 15,5 ± 5mm (max. 30mm). Veličina primenjenog ASO bila je prosečno 1,4 puta veća u odnosu na statički dijametar defekta i za 1-2mm veća od dijametra „sizing“ balona. Uređaj je uspešno postavljen kod 146/151 bolesnika (96%). Kod 6 bolesnika desile su se komplikacije: 2 major – embolizacije (1,3%), 4 minor – aritmije (VES, SVPT, AVB II stepena). Komplikacije nisu bile praćene značajnim hemodinamskim poremećajima. **Zaključak:** U izboru veličine uređaja smo se pridržavali preporuka proizvođača. Uspešnost zatvaranja defekta, kao i rezultati jednogodišnjeg praćenja su bili zadovoljavajući, u skladu sa iskustvom većine drugih autora. Embolizacije su se desile kod dva bolesnika, dok nisu zapažene erozije srca u jednogodišnjem praćenju, kao ni procedural complications, and lower intervention costs. Amplatzer atrial septal defect ocluder (ASO) is a double self-retracting disc connected by a “waist”, whose diameter determines the size (4mm-38mm). **Patients and methodology:** The ASD transcatheter closure using ASO was performed in 146 patients (65 girls, 75 boys) from January 2005 to january 2017., The patients hystory, clinical examination, ECG, chest X-ray and echocardiographic examination were taken, followed by tests 15-30 days, 3-6 months and 12 months after the intervention. Complications observed during and after the intervention and during the monitoring period were evaluated. **Results**: The age of the patients was 3.5 to 17.5 years (average 7.5 years), BM of 15.5kg - 68kg. Secundum type defect (one hole) had 96 patients (66%), 12 pts had two or more defects (7.5%), 6 pts had aneurysm in fosa ovalis (4%), 22 pts had deficient retroaortic rim (15.5%), 10 pts had deficient posterior and caval vein rims (7%). Interventions were carried out by standard procedure. The static diameter of the defect was measured and the size was compaired with the “sizing” balloon diameter: 13.5 ± 6.2mm (max 26mm) vs 15.5 ± 5mm (max. 30mm). The size of the ASO was 1.4 times higher than the static diameter of the defect, and by 1 to 2 mm larger than the diameter of the sizing balloon diameter. The device was successfully set up in 146/151 patients (96%). The complications occurred in 6 patients: 2 major - embolization (1.3%), 4 minor - arrhythmias (VES, SVPT, AVB II degree). There were not cases with significant haemodynamic compromise. **Conclusion:** We followed the manufacturer’s recommendation which refers to the device size. The effectiveness of the procedures, as well as the results of one-year monitoring, is satisfactory, in line with the majority of other authors. Embolization occurred in two patients. There were no observed in one-year follow-up period, nor significant haemodynamic compro-

značajni hemodinamski poremećaji u toku intervencije. Transkatetersko zatvaranje ASD je efikasna i bezbedna procedura.

mise during interventions. ASD transcathetic closure with Amplatzer device is safe and effective procedure.

DA LI JE TERAPIJA KOMBINOVANOM ORALNOM KONTRACEPCIJOM OPRAVDANA I KORISNA?

Živić Saša, Stanković Sandra, Cvetković Vesna, Vuić Jelena, Karin Vasić
Klinika za dečije interne bolesti, Kliniki centar Niš, Srbija

Kombinovana oralna kontracepcija (KOK) podrazumeva grupu lekova koji u svom sastavu imaju obe vrste principalnih ženskih polnih hormona: estrogene i progesterone i predstavlja jedno od najve ih dostignu a na polju javnog zdravstva u XX veku. Na in podele KOK je višestruk: prema sastavu tableta, prema režimu davanja, prema dozi estrogena, prema delovanju progesterona. Upotreba ove vrste lekova na Balkanu veoma je retka, često izbegavana iz predrasuda ili zbog kulturoloških razloga i pored činjenice da danas preko 150 miliona žena širom sveta piju KOK (iz kontraceptivnih i iz nekontraceptivnih razloga). KOK ostvaruje svoju funkciju inhibicije ovulacija na dva načina: primarno i sekundarno. Primarno, i estrogenska i gestagenska kompnenta mehanizmom negativne povratne sprege preveniraju skok u lučenju gonadotropina - primarno FSH čime se onemogućava rast folikula a time i preovulatorn skok LH. Sekundarnim ili perifernim mehanizmima delovanja KOK dovodi do promena u endometrijumu i do promena kvaliteta cervikalne sluzi: pod dejstvom gestagena prekida se proliferativna faza u razvoju endometrijuma te tako on postaje atrofičan i nepripremljen za implantaciju, dok cervikalna sluz postaje jako gusta i viskozna i tako sprečava prodor spermatozoida. Implanataciju gestageni sprečavaju i ometajući peristaltiku jajovoda. Pored dobro poznatih kontraceptiv-

IS THERAPY WITH COMBINED ORAL CONTRACEPTIVE REASONABLE AND EFFECTIVE?

Saša Živić, Sandra Stanković, Vesna Cvetković, Jelena Vuić, Karin Vasić
Clinic of Pediatrics, Clinical Center of Niš, Niš, Serbia

Combined oral contraceptive (COC) formulations comprise a group of drugs composed of two principal female sex hormones: estrogen and progestogen. They are one of the greatest achievements of the 20th century in the field of public health. Classification of COC is multiple: according to composition, mode of administration, dose of estrogen, activity of progestogen. The use of these drugs in the Balkans is very rare, they are often shunned due to prejudice or for cultural reasons, despite the fact that today more than 150 million women worldwide use COC (as a means of contraception and for other indications). Their mechanism of action includes inhibiting ovulation in two ways: primary and secondary. Primarily, the estrogen and progestogen components, by means of negative feedback mechanism prevent a rise in the secretion of gonadotropins - primarily FSH, thus inhibiting the growth of ovarian follicles and pre-ovulatory LH elevation. By means of secondary or peripheral mechanisms of action, COC lead to changes in the endometrium and quality of cervical mucus: progestogen inhibits the proliferative phase in the development of the endometrium, leading to atrophy, hence the endometrium is no longer prepared for implantation, the cervical mucus becomes very thick and viscous, thus preventing infiltration of spermatozoids. Progestogens can also impair implantation by disrupting peristalsis of the Fallopian tubes. In addition to the

nih pozitivnih dejstava KOK ima i čitav niz povoljnih efekata za mnoge organske i funkcionalne poremećaje, kao što su poremećaji ciklusa, dismenoreja, premenstrualni sindrom, migrene, stanja hiperandrogenizma, ovarijalne ciste, endometrioza, miomi, pelvične inflamatorne bolesti, prevenciju osteoporoze, reumatoidni artritis, multiplu sklerozu, astmu, te prevenciju benignih tumora dojke, ovarijalnih, endometrijalnih i kolorektalnih karcinoma. Antiandrogena KOK široko je zastupljena u lečenju epidemijski čestog problema među adolescentkinjama kakav je sindrom policističnih jajnika od kojeg boluje gotovo svaka peta mlada žena, shodno konsenzusu američkog i evropskog reproduktivnog udruženja.

Ključne reči: Kontracepcija, kontraceptivni učinci, nekontraceptivni efekti

well-known contraceptive health benefits, COC have a range of beneficial effects in a number of organic and functional disorders, such as cycle disorders, dysmenorrhea, premenstrual syndrome, migraine, conditions characterized by hyperandrogenism, ovarian cysts, endometriosis, fibroids, pelvic inflammatory disease, prevention of osteoporosis, rheumatoid arthritis, multiple sclerosis, asthma, as well as the prevention of benign breast tumors, ovarian, endometrial and colorectal cancer. Antiandrogenic COC are widely prescribed in the treatment of frequent problems among adolescents such as polycystic ovarian syndrome, which affects almost every fifth young woman, according to the consensus of the American and European societies for Reproductive Medicine.

Key words: Contraception, contraceptive effects, non-contraceptive effects

AKAZ AKREDITACIJA I NADZOR VEZAN ZA DJEČIJU I NOVOROĐENAČKU POPULACIJU - ISKUSTVA I PROCJENA VANJSKOG OCJENJIVAČA I NADZORNE

Adnan Bajraktarević[1], Ahmed Novo[2], Vera Kerleta-Tuzović[2]; Zoran Riđanović[2], Lutvo Sporišević[3], Eni Hasanović[4], Jasmin Hodžić[5], Enes Šečić[6], Vildana Doder Drljević[7], Vedina Čordalija[8], Mašala Almir[9], Aida Šljivo[10], Danijel Bajić Ovčina[11], Milan Mioković[11]

[1]Javna Ustanova Dom zdravlja kantona Sarajevo-predškolski odjel, [2]AKAZ Agencija za akreditaciju i kvalitetu u zdravstvu, [3]Hitna pomoć kantona Sarajevo - Novo Sarajevo -pedijatrijsko odjeljenje, [4]Institut za majku i i dijete kantona Sarajevo odjel Ilidža, [5]Opšta bolnica Zenica - Porođajno-neonatološki odjel, [6]Zavod za javnu zdravstvenu zaštitu - epidemiološka služba kantona Sarajevo, [7]Federalno ministarstvo zdravstva

AKAZ ACREDITATION AND CONTROL ABOUT CHILDREN AND NEWBORN POPULATION - EXPERIENCE AND ASSESSMENT OF EXTERNAL ASSESSOR AND SUPERVISORY CONTROL

Adnan Bajraktarević[1], Ahmed Novo[2], Vera Kerleta-Tuzović[2]; Zoran Riđanović[2], Lutvo Sporišević[3], Eni Hasanović[4], Jasmin Hodžić[5], Enes Šečić[6], Vildana Doder Drljević[7], Vedina Čordalija[8], Mašala Almir[9], Aida Šljivo[10], Danijel Bajić Ovčina[11], Milan Mioković[11]

[1]Public Health Institution of Canton Sarajevo-preschool department, [2]AKAZ Agency for Accreditation and Quality in Health, [3]First medical Aid- Novo Sarajevo-pediatric department, [4]Institute for Mother and Child of Sarajevo Canton Department of Ilidža, [5]General Hospital Zenica - Maternity Neonatology Department, [6]Institute for Public Health Protection - epidemiological service of Canton Sarajevo,

BiH, [8]Psihijatrijska bolnica Sarajevo - odjel za alkoholizam, narkomaniju i toksikologiju mladih, [9]Fakultet sporta odjel menadženta, [10]Dječija sela Sarajevo SOS Kinderdorf BiH, [11]Kanonalna javna ustanova Dom zdravlja Sarajevo-odjel za kvalitetu.

Uvod: Agencija za akreditaciju i kvalitetu u zdravstvu s posebnom naznakom za djecu, novorođenčad i mlade- AKAZ je prvo involvirana u akreditacije porodilišta i sertifikacije BFH bolnica prijatelja beba i promocije dojenja, drugo u proces akreditacija pedijatrijskih odjela i neonatoloških porodiljskih odjela prilikom akreditacija općih bolnica sekundarne zaštite i klinika tercijarne zaštite s dječijom hirurgijom i anestezijom, treće akreditacija predškolskih i školskih dispanzera i pedijatrijskih subspecijalističkih savjetovališta primarne zaštite u domovima zaštite i privatnim pedijatrijskim ordinacijama i četvrto centrima za rani rast razvoj (RRR). **Cilj rada:** Ukazivanje na poseban značaj pravilne procjene svih standarda i kriterija AKAZ-a u ciljanoj dječijoj i novorođenačkoj populacij kao i podizanje kvalitete zdravstvene zaštite i u ovom segmentu u federaciji BiH i državi BiH, kao i distriktu Brčko. **Metode rada:** Tokom perioda 2015-2017 godina izvršena je vanjska ocjena porodilišta prijatelja beba BFH u Brčkom, vanjska ocjena centra za rani rast i razvoj Dječija sela u Sarajevu na Alipašinom Polju SOS Kinderdorf, nadzor BFH (baby friendly hospital) porodiljskih i novorođenačkih odjela porodilišta općih bolnica u Zenici, Novoj Bili, Travniku i Bugojnu, kao i vanjska ocjena opće bolnice u Gračanici porodiljskog-neonatološkog odjela i pedijatrijskog odjeljenja. **Rezultati:** Svih sedam (7) akreditacija AKAZ-a se završilo uspjehom od toga vanjska ocjena tri (3) i četiri (4) nadzora koja su potvrdila akreditaciju. Akreditacija u Brčkom BFH je imala uspješnost 95,70%, potvđeni nadzor BFH u Zenici od 99,30%, u Novoj Bili 87,80%, u Travniku 95,90% i Bugojnu 88,50%. Centar za RRR je imao ispunjenost kriterija s 92,00% od 80% minimum. Zaključak: Agencija za akreditaciju i kvalitetu

[7]Federal Ministry of Health B&H, Psychiatric [8]Hospital Sarajevo-Department of Alcoholism, Drug Addiction and Toxicology, [9]Faculty of Sports Department for Management, [10]Children's Village Sarajevo SOS Kinderdorf Bosnia and Herzegovina, [11]Public Health Institution of Canton Sarajevo Department for Health Quality

Introduction: Agency for accreditation and quality in health with a special note for children, newborns and young people - AKAZ was initially involved in accreditation of maternity wards and certification of BFH (baby friends hospital) and breastfeeding promotion, second in process of accreditation for pediatric departments and neonatological maternity wards in the accreditation of general hospitals secondary care and tertiary care clinics with children surgery and anesthesia, third accreditation of preschool and school dispensaries and pediatric subspecialist counseling centers for primary care in goverment offices and private pediatric clinics and fourth Centers for Early Growth Development (EGD). **Objective:** To emphasize the special importance of correct assessment of all AKAZ standards and criteria in targeted child and newborn populations as well as improvement of the health quality care in this segment of Federation of Bosnia and Herzegovina and state of Bosnia and Herzegovina as well as the Brcko District. **Methods:** During the period 2015-2017, an external evaluation of the maternity ward of the BFH baby friends hospital in Brcko was conducted, the external evaluation of Center for Early Growth and Development of the Children's Village in Sarajevo in Alipašino Polje, SOS Kinderdorf, the BFH (baby friendly hospital) maternity and maternity wards general hospitals in Zenica, Nova Bila, Travnik and Bugojno, as well as the external evaluation of the general hospital in Gračanica Maternity Neonatology department and Pediatric department. **Results:** All seven (7) accreditations ended with the success of the external evaluation of three (3) and four (4) surveillance that confirmed ac-

u zdravstvu AKAZ zadužena je promoviranje i kontrolu kvaliteta u zdravstvu kako svih politika i strategija zdravstva, programa, procedura i dokumenta, tako i same kvalitete rada uz stalni nadzor i izdavanje sertifikacija i akreditacija osobito u onom dijelu segmenta vezanih za djecu i novorođenačku populaciju.

Ključne riječi: Akreditacija, Certifikacija, AKAZ, Djeca, Kriteriji, Standardi

creditation. Accreditation in Brcko BFH had a success rate of 95.70%, BFH's verified control of Zenica from 99.30%, in Nova Bila 87.80%, in Travnik 95.90% and Bugojno 88.50%. The EGD Center had a 92.00% criteria from minimum 80%. **Conclusion:** The Agency for Accreditation and Quality of Health AKAZ is in charge of promoting and controlling quality in health care, as well as all politics and strategies of health care, programs, procedures and documents, as well as the quality of work with continuous supervision and issuance of certification and accreditation, especially in that part of the segments for children and newborns.

Keywords: Accreditation, Certification, AKAZ, Children, Criteria, Standards.

PEDIJATRIJSKA KARDIOLOGIJA/ KARDIOHIRURGIJA NAKON 22 GODINE

Zijo Begić, Sanko Pandur, Almira Kadić, Mirza Halimić, Nedim Begić
Pedijatrijska klinika KCU Sarajevo, Bosna i Hercegovina

Pedijatrijska kardiologija je osnova pedijatrije i bavi se uglavnom urođenim srčanim manama. Pedijatrijska kardiologija zajedno sa pedijatrijskom kardiohirurgijom je glavni parametar ocjene razvijenosti medicine određene države, prvenstveno zbog smanjenja pre, peri i neo natalnog mortaliteta. Od aprila 1997 godine do februara 2018 godine u KCUS je operisano 768 pacijenata sa urođenim srčanim manama od toga 563 (73,3%) acijanotičnih i 205 (26.6%) cijanotičnih mana , lijevo desnog šanta 417 (54.2%) kompleksinih sa ToF 174 (22.6%) opstruktivnih 106 (13.8 %) i opstruktivnih sa šantom 53 (6.9%) ostalo 19 (2.4%) . Kompletna korekcija je urađena kod 680 pacijenata (88.5%) a palijacija u 86 (11.1%).

PEDIATRIC CARDIOLOGY / CARDIOHIRURGY AFTER 22 YEARS

Zijo Begić, Sanko Pandur, Almira Kadić, Mirza Halimić, Nedim Begić
Pediatric Clinic, University Clinical Center Sarajevo, Sarajevo, Bosnia and Herzegovina

Pediatric cardiology is the basis of pediatrics and deals with mainly innate heart defects. Pediatric cardiology combined with pediatric cardiac surgery is the main parameter of the assessment of the development of medicine in a particular country, primarily due to the reduction of pre-and post-neo-natal mortality. From April 1997 to February 2018, 768 patients with congenital heart defects were operated in KCUS, of which 563 (73.3%) of acyanotic and 205 (26.6%) cyanotic defects, left right shunt 417 (54.2%) of complexin with ToF 174 (22.6%) obstructive 106 (13.8%) and obstructive with shunt 53 (6.9%) others 19 (2.4%). Complete correction was made in 680 patients (88.5%) and palliation in 86 (11.1%).

Reoperacija je bilo kod 51 pacijenta (6.6%) a mortalitet je iznosio 7,8 % (60 pacijenata). Ekstrakorporalna cirkulacija je korištena kod 571 pacijenta (74.3 %), a rane postoperativne komplikacije smo imali kod 181 pacijenta (23.8%). Od novembra 2017 godine nije urađena niti jedna korekcija urođenih srčanih mana a došlo je i do osipanja kadra. Budućnost pedijatrijskae kardiologije/kardiohirurgije je krajnje upitna.

Ključne riječi: pedijatrijska kardiologija/kardiohirurgija, rezultati , budućnost.

Reoperation was in 51 patients (6.6%) and mortality was 7.8% (60 patients). The extracorporeal circulation was used in 571 patients (74.3%), and early postoperative complications were found in 181 patients (23.8%). Since November 2017, no correction of congenital heart defects has been made, and there has been a drop in cadre. The future of pediatric cardiology / cardiac surgery is extremely questionable

Key words: pediatric cardiology / cardiac surgery, results, future.

DJECA SA NEURORAZVOJNIM POREMEĆAJIMA U BOSNI I HERCEGOVINI -DIJAGNOSTIKA, TERAPIJA I PREVENCIJA

Feriha Hadžagić Ćatibušić, Sajra Užičanin, Nermina Hodžić, Azijada Sadžak, Lejla Smajić-Hodžić, Ajsela Bućan Varatanović
Pedijatrijska klinika, Klinički centar Univerziteta u Sarajevu, Bosna i Hercegovina

Spektar neurorazvojnih poremećaja obuhvata cerebralnu paralizu, mentalno onesposobljenje, te periferne i centralne poremećaje u kominikaciji. Dijagnoza cerebralne paralize se sa sigurnošću može potvrditi u dobi od 4 godine. Surveillance of Cerebral Palsy in Europe (SCPE) je zajednički registar djece sa cerebralnom paralizom koji je započet 1998.godine Cilj je prikupljanje epidimioloških podataka, u cilju praćenja trendova cerebralne paralize, razvoja dijagnostike, praćenja i tretmana djece sa cerebralnom paralizom.. Cerebralna paraliza je uglavnom nedovoljno prepoznat javnozdravstveni problem u svijetu i pored toga što je najčešći uzrok teških motoričkih oštećenja u djece i što utjecaj bolesti nije samo medicinski već ima svoje društvene, psihološke i ekonomske učinke na ukupnu kvalitetu života oboljelih i njihove okoline. Neurorazvojni poremećaji se javljaju izolirano ili asocirano, kada je prisutno

CHILDREN WITH NEURODEVELOPMENTAL DISORDERS IN BOSNIA AND HERZEGOVINA-DIAGNOSIS, TREATMENT AND PREVENTION

Feriha Hadžagić-Ćatibušić, Sajra Užičanin, Nermina Hodžić, Azijada Sadžak, Lejla Smajić-Hodžić, Ajsela Bućan Varatanović
Pediatric Clinic, University Clinical Center Sarajevo, Sarajevo, Bosnia and Herzegovina

The spectrum of neurodevelopmental disorders includes cerebral palsy, intellectual disability, and peripheral and central communication disorders. The diagnosis of cerebral palsy could be confirmed to a certainty by the age of 4 years. Surveillance of Cerebral Palsy in Europe (SCPE) is a register of children with cerebral palsy, which has been established in 1998. The aim of the register has been to collect epidemiological data, in order to follow trends of cerebral palsy and to improve the diagnosis and treatment of children with cerebral palsy. Cerebral palsy is mostly unrecognized public and health problem in the world, although it is the most frequent cause of severe motor disability in childhood. Cerebral palsy has not only medical, but also social,

više neurorazvojnih poremećaja kod jednog djetea. Intelektualno onesposobljenje se sreće kod 30-60% djece sa cerebralnom paralizom. Teško intelektualno onesposobljenje se sreće kod 31% djece sa cerebralnom paralizom. Neurorazvojni poremećaji imaju visoke troškove liječenja, prvenstveno zbog toga jer se radi o doživotnoj intenzivnoj skrbi koja obuhvaća više segmenata društva. Od rane dobi neophodno je uključivanje u program fizikalne terapije, logopedskog tretmana, te intenzivan neuropedijatrijski, fizijatrijski, psihološki i drugi nadzor i praćenje, uz istovremenu integraciju među vršnjake. Djeca sa neurorazvojnim poremećajima u Bosni i Hercegovini se nedovoljno prepoznata , kao značajan segment brige o hronično bolesnoj djeci. Za bolju buduću djagnostiku, terapiju i prevenciju navedenih poremećeja neopohodna je mobilizacija svih profesionalaca, koji se bave ovom poroblematikom (pedijatri, neuropedijatri, fizijatri, ortopedi, psiholozi,logopedi i defektolozi). Slijedeći korak, bi bio pokretanje registra djece sa neurorazvojnim poremećajima. Radi se o multidiscilinarnom pristupu ozbiljnom problemu,gdje je neophodna uvezanost zdravsta i školstva. Postojeći resursi stručnjaka koji se bave dijagnostikom i liječenjem neurorazvojnih poremećaja su nedovoljno uvezani, tako da je dobra uvezanost uslov za dalju bolju organizaciju rada i kvalitetniju pomoć djeci kojoj je to potrebno.

psychological and economic influences for complete quality of life for those who suffer from cerebral palsy and for their environment. Neurodevelopmental disorders have very high costs of medical care, which includes several segments of society. The early intervention program involves physical therapy, speech therapy, and follow up by neuropediatrician, physiatrist, psychologist and social integration with peers. Children with neurodevelopmental disorders in Bosnia and Herzegovina have not been recognized enough as an important segment of care for children with chronic diseases. For better future diagnosis, treatment and prevention of those disorders, the mobilization of all professionals included in the care is needed (pediatrician, neuropediatrician, physiatrists, orthopedists, psychologists, speech therapists, special educators). The next step should be the establishment of register of children with neurodevelopmental disorders. This is multidisciplinary approach , where the connection between health and education system is needed. The existing professional resources, who have been involved in process of diagnosis and treatment of neurodevelopmental disorders have not been connected enough. The good professional connection is necessary for future better organization and better help for children, who need it.

MIJELOMENINGOKELA I NEUROGENI MOKRAĆNI MJEHUR U DJECE – KAKO SAČUVATI RENALNU FUNKCIJU?

Danka Pokrajac[1], Amra Džananović[2], Azra Karamustafić[3]
[1]Pedijatrijska klinika II, Klinički centar Univerziteta u Sarajevu, Sarajevo, Bosna i Hercegovina

MYELOMENINGOCOELE AND NEUROGENIC BLADDER IN CHILDREN - HOW TO PRESERVE RENAL FUNCTION?

Danka Pokrajac[1], Amra Džananović[2], Azra Karamustafić[3]
[1]Pediatric Clinic II, University Clinical Center Sarajevo, Sarajevo, Bosnia and Herzegovina
[2]Radiology Clinic, University Clinical Center Sarajevo, Sarajevo, Bosnia and Herzegovina

[2]Klinika za radiologiju, Klinički centar Univerziteta u Sarajevu, Sarajevo, Bosna i Hercegovina
[3]Klinika za dječiju hirurgiju, Klinički centar Univerziteta u Sarajevu, Sarajevo, Bosna i Hercegovina

Uvod: Mijelomeningokela (MMC) je kongenitalna malformacija centralnog nervnog sistema uzrokovana neuspješnim procesom zatvaranja neuralne cijevi tokom rane trudnoće. Pacijenti s MMC-om pokazuju mnogo abnormalnosti. Neurogena disfunkcija mokraćnog mjehura može uzrokovati teška oštećenja bubrega. Prvi korak u adekvatnom tretmanu je započinjanje odgovarajućeg liječenja od rođenja. **Cilj:** Klinička procjena pacijenata sa MMC. **Metode:** Medicinska evidencija od 33 pacijenta sa MMC-om evaluirana je retrospektivno. Podaci su uključivali: perinatalnu i postnatalnu istoriju, laboratorijske nalaze, nalaze urodinamskih studija (UDS) i mikcione cistouretrografije (MCUG) i opcije tretmana. **Rezultati:** Utvrđeno je da je samo 6% majki uzimalo folnu kiselinu prije začeća i tokom prvog tromjesečja trudnoće. Antenatalni ultrazvuk je dokazao MMC u samo 24,2% slučajeva. Na prvom pregledu od strane dječjeg nefrologa 24,2% pacijenata je bilo u dobi do 6 mjeseci. Najmanje jednu febrilnu infekciju urinarnog sistema imalo je 75,7%, a vezikoureteralni refluks (VUR) 36,4% djece. Čista intermitetna kateterizacija (CIC) je primijenjena u samo 45,5% pacijenata, a antiholinergici u 30,3%. Na UDS neurogena pretjerana aktivnost detruzora je ustanovljena u 57,6% pacijenata. **Zakljuci:** U našoj studiji došli smo do poražavajućih rezultata. Gotovo sve majke djece sa MMC nisu uzimale folnu kiselinu prije i nakon koncepcije i rijetko su se podvrgavali prenatalnim dijagnostičkim testovima. Djeca sa MMC kasno su se ispitivala od strane pedijatrijskog nefrologa. Roditelji su izbjegavali primjenu CIC-a i antiholinergika. U ovakvoj situaciji teško je sačuvati renalnu funkciju. Kako bi se smanjila učestalost MMC u djece Zavod za javno zdravstvo Federacije Bosne i

[3]Clinic for Children's Surgery, University Clinical Center Sarajevo, Sarajevo, Bosnia and Herzegovina

Background: Myelomeningocele (MMC) is congenital malformation of the central nervous system caused by the failure of the neurulation process during early pregnancy. Patients with MMC present many abnormalities. Neurogenic bladder sphincter dysfunction can cause severe renal damage. The first step in adequate management is to start adequate medical treatment from birth. **Aim:** Clinical evaluation of patients with MMC. **Methods:** Medical records of 33 patients with MMC were evaluated retrospectively. The data included: perinatal and postnatal history, laboratory findings, findings of the urodynamic studies (UDS) and voiding cystourethrography (VCUG), and treatment options. **Results:** It was found that only 6% of mothers took folic acid before conception and during first trimester of pregnancy. Antenatal ultrasound was evidenced MMC in only 24.2% cases. At the first examination of pediatric nephrologist, 24.2% patients were of age up to 6 months. At least one febrile urinary tract infections (UTI) had 75.7% and vesicoureteral reflux (VUR) 36.4% of patients. Clean intermittent catheterization (CIC) was used in only 45.5% of patients and anticholinergics in 30.3 %. On the UDS the neurogenic detrusor overactivity (NDO) was found in 57.6% of patients. **Conclusions:** In our study, we have come to the devastating results. Almost all mothers of MMC children did not take folic acid before and after conception and were rarely exposed to prenatal diagnostic tests. Children with MMC were examined late by pediatric nephrologist. Parents avoided using the CIC and anticholinergics. In this situation, it is difficult to preserve renal function. In order to reduce the frequency of MMCs in children, the Bosnia and Herzegovina Institute for Public Health must be actively involved and, together with different specialties

Hercegovine mora biti aktivno uključen i zajedno sa različitim specijalnostima , koji tretiraju djecu sa MMC, napraviti nacionalni program prevencije i ranog tretmana ove bolesti.

Ključne riječi: neurogeni mokraćni mjehur, mijelomeningokela, urodinamika, intermitentna kateterizacija.

involved in treatment of children with MMC, make a national program for prevention and early treatment of this disease.

Keywords: neurogenic bladder, myelomeningocele, urodynamics, intermittent catheterization.

RANA NEONATALNA TROMBOCITOPENIJA

Lejla Dostović Hamidović
Klinika za dječije bolesti,
Univerzitetski klinički centar Tuzla
Bosna i Hercegovina

Uvod: Trombocitopenija je jedan od najčešćih hematoloških poremećaja koji se sreće u novorođenčadi primljenih u jedinicu neonatalne intenzivne njege. Evaluacija i menadžment trombocitopenije, koja može biti marker osnovne bolesti kao i faktor rizika za hemoragiju, predstavlja izazov za neonatologa. **Cilj rada:** Cilj istraživanja je bio evaluirati zdravstveno stanje novorođenčadi, težinu rane trombocitopenije, te prediktivnu i specifičnu vrijednost rane trombocitopenije u neonatalnom ishodu. **Ispitanici i metode:** Analiza je retrospektivno-prospektivna, rađena u jednogodišnjem periodu, bazirana na medicinskoj dokumentaciji Klinike za ginekologiju i akušerstvo i Klinike za dječije bolesti Univerzitetsko kliničkog centra Tuzla. Analizirano je 108 novorođenčadi sa ranom trombocitopenijom i perinatalnim rizicima. Graničnom vrijednosti trombocita je smatrana vrijednost ispod 150×109/L, a napravljena je i podjela prema broju trombocita na grupu blagu, umjerenu, tešku i vrlo tešku. **Rezultati:** Nađeno je da su novorođenčad sa ranom trombocitopenijom češće muškog spola, pripadaju grupi prematurne i hipotrofične novorođenčadi. U našoj studiji najzastupljenija je bila blaga trombocitopenija sa 67,60%, zatim umjerena trom-

EARLY THROMBOCYTOPENIA IN NEONATES

Lejla Dostović Hamidović
Clinic for Children's Diseases,
University Clinical Center Tuzla, Tuzla,
Bosnia and Herzegovina

Introduction: Thrombocytopenia is the most common haematological abnormality among neonates admitted to the Neonatal Intensive Care Unit. Evaluation and management of thrombocytopenia, which can be a marker of underlying disease and a risk factor for hemorrhage, is a challenge for neonatologists. **Aim:** The aim of this study was to analyze and describe the health condition of neonates, severity of early thrombocytopenia, and predictive and specific value of early thrombocytopenia in neonatal outcome. **Patients and Methods:** The study was retrospective-prospective, conducted in a one-year period, based on the medical records of The Department of Obstetrics and Gynecology and The Department of Paediatrics at The University Clinical Center Tuzla. We analyzed 108 newborns with early thrombocytopenia and perinatal risks. The blood platelets count below 150×109/L was defined as lower limit of normal, and according to their lowest platelet count neonates with thrombocytopenia were divided into four groups: mild, moderate, severe and very severe thrombocytopenia. **Results and Discussion:** Infants with early thrombocytopenia were more frequently male, belonged to the group of premature and hypothrophic newborns. In

bocitopenija 25,0%, a slijedile su teška i vrlo teška trombocitopenija sa po 3,70% slučajeva. Analizom maternalnih i neonatalnih faktora, te samog toka porođaja utvrđeno je da su najveći riziko faktori za nastanak rane trombocitopenije od strane novorođenčeta asfiksija, respiratorni distres sindrom i sepsa, a od strane majke intrauterini zastoj u rastu, ruptura plodovih ovoja, EPH gestoza i perinatalna infekcija. **Zaključci:** Težina trombocitopenije utiče na pojavu hemoragijskih manifestacija i neonatalnog smrtnog ishoda.

Ključne riječi: trombocitopenija, novorođenče, neonatalni ishod

our study, the most common was mild thrombocytopenia (67,60%), followed by moderate thrombocytopenia (25,0%), severe and very severe thrombocytopenia (3,70% each). By analyzing maternal and neonatal factors, and the delivery pattern itself, it was found that the highest factors for early neonatal thrombocytopenia in neonates were asphyxia, respiratory distress syndrome and sepsis, and in mothers intrauterine growth retardation, rupture of membranes, EPH gestosis and maternal infections. **Conclusion:** It was found that the severity of thrombocytopenia affected the occurrence of hemorrhagic manifestations and neonatal mortality.

Key words: thrombocytopenia, neonates, neonatal outcom

PERINATALNI ISHOD TRUDNOĆA I NOVOROĐENČADI NAKON POSTUPAKA MEDICINSKI POTPOMOGNUTE OPLODNJE (IVF) NA PODRUČJU TUZLANSKOG

Selma Muratovic, Dženita Ljuca, Alma Džindo Merić, Asja Muratović
Klinika za ginekologiju i akušerstvo, Univerzitetsko klinički centar Tuzla, Tuzla Bosna i Hercegovina[1]

U vremenskom periodu od 2013. do 2017. godine na Klinici za ginekologiju i akušerstvo JZU UKC Tuzla je analiziran perinatalni ishod 406 poroda i 449 novorođenčadi čije su majke imale probleme sa spontanim zanošenjem. Upoređeni su rezultati 237 trudnoća koje su verifikovane kao sterilitet sa spontanim zanošenjem sa 244 novorođenčadi iz tih trudnoća i 169 trudnoća nakon IVF-a sa 205 novorođenčadi iz tih trudnoća. Od IVF trudnoća bilo je 36 (21,30%) blizanačkih, dok je kod trudnoća nakon spontanog zanošenja značajno manje

PREGNANCY OUTCOMES AFTER ASSISTED REPRODUCTIVE TECNOLOGY (ART) IN TUZLA CANTON

Selma Muratovic, Dženita Ljuca, Alma Džindo Merić, Asja Muratović
Clinic for Gynecology and Obstetrics (Neonatal Unit), University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina[1]

In period from 2013 to 2017, perinatal outcome of 406 births and 449 newborns whose mothers had problems with spontaneous conceiving, was analyzed in University hospital center Tuzla (Gynecology and Obstetrics clinic). There were compared results of 237 pregnancies verified as sterility-spontaneous conceiving (244 newborns from these pregnancies) and 169 pregnancies after IVF with 205 newborns from these pregnancies. Out of the 169 IVF pregnancies there were 36 (21.30%) of twins, while in pregnancy after spontaneous conceiving was less than 7 (2.95%) twin pregnancies. Comparing preg-

7 (2,95%) blizanačkih trudnoća. Uspoređujući trudnoće i novorođenčad nakon IVF-a sa trudnoćama i novorođenčadi nakon spontanog zanošenja nađeno je: porod dovršen carskim rezom 160 (94,67%) : 161 (67,93%); novorođenče < 37 GN 71 (34,63%) : 18 (7,38%); porođajna težina ispod 999g 0 (0%) : 1 (0,04%); 1000-1499g 10 (4,88%) : 0 (0%); 1500-2499g 43 (20,97%) : 20 (8,19%, Polna distribucija se neznatno razlikovala u obje skupine, muška novorođenčad 104 : 111 i ženska 101 : 133. Starost majki sa spontanim zanošenjem ispod 25 godina je 18 trudnica, od 25-29 godina je 56 trudnica, 30-35 godina 103 trudnica, od 36-39 godine 54 trudnica, iznad 40 godina 11 trudnica. Starosna dob majki nakon IVF se statistički značajno razlikuje sa većom starosnom dobi: ispod 25 godina je 8 trudnica, od 25-29 godina je 29 trudnica, 30-35 godina 73 trudnica, od 36-39 godine 74 trudnica, iznad 40 godina 23 trudnica. Uspoređujući trudnoće i novorođenčad nakon IVF-a sa trudnoćama i novorođenčadi nakon spontanog zanošenja nađeno je: U teškoj asfiksiji sa Apgar scorom ispod 5 4:5 , srednje teškoj sa Apgar scorom od 5-7 novorođenčadi 27:30 novorođenčadi, a sa Apgar scorom iznad 8 je 173:210 novorođenče. Nađena je veća ugroženost novorođenčadi nakon IVF postupka, što je uzrokovano većom učestalošću višeplodnih trudnoća,novorođenčadi < 37 GN, PT < 2500 grama, starijom životonom dobitrudnica.Trudnoće nakon IVF-a u visokorizične i zahtijevaju poseban nadzor i pozornost.

Ključne riječi: IVF, novorođenčad, ishod

nancies and newborns after IVF with pregnancies and newborns after spontaneous conceiving, it was found: cesarean section ratio 160 (94.67%): 161 (67.93%); newborns <37 GW 71 (34.63%): 18 (7.38%); birth weight below 999g 0 (0%): 1 (0.04%); 1000-1499g 10 (4.88%): 0 (0%) ; 1500-2499g 43 (20,97%) : 20 (8,19%). Gender distribution was slightly different in both groups, male newborns 104: 111 and female 101: 133. Age of mothers with spontaneous conceiving was: age of 25-18 pregnant women, 25-29 years- 56 pregnant women, 30-35 years- 103 pregnant women, 36-39 years-54 pregnant women, over 40 years-11 pregnant women. Age of mothers after the IVF was significantly different according to older age: under 25- 8 pregnant women, 25-29 years- 29 pregnant women, 30-35 years-73 pregnant women, 36-39 years-74 pregnant women, over 40 years- 23 pregnant women . Comparing pregnancies and newborns after IVF with pregnancies and newborns after spontaneous conceiving, it was found:: severe asphyxia with Apgar score below 5- 5: 4, medium to severe asphyxia with Apgar score of 5-7 -27:30 newborns and with Apgar score above 8 -173: 210 newborns.

It was found that newborns born in procedures of IVF are group of high risk newborns, which is caused by a higher incidence of multiple pregnancies, birth gestation <37 GW, birth weight <2500 grams, and older mothers age at time of birth. The effects of IVF procedures are high risk and require special monitoring and perintal care.

Keywords: IVF, newborn, outcome

UČESTALOST DEPRESIVNIH SIMPTOMA KOD PREADOLESCENATA

Zana Đulović Jusić[1], Sabina Ademović-Džambić[1], Nermina Đulović[1], Samira Salković-Srabović[1]
JZNU Dom zdravlja „Dr Mustafa Šehović“ Tuzla
Služba opšte porodične medicine, Dispanzer za školsku djecu i omladinu

Cilj: Ispitati učestalost depresivnih simptoma kod preadolescenata u odnosu na spol i hroničnu bolest ; Kvalitet zbrinjavanja djece sa depresivnim simptomima. **Metode:** Urađena je prospektivna studija u trajanju od 2 mjeseca sa uzorkom od 78-oro djece koji se liječe u Školskom dispanzeru. Djeca su svrstana u dvije grupe; kontrolna i bolesna. Korištena je metoda prikupljanja podataka, Skala samoprocjene (Birleson Self-Rating Scale), uvid u zdravstveni karton i iskazi roditelja. Ispunjavajući skalu dijete na svakoj čestici mora odabrati jednu od tri tvrdnje (da, ponekad i ne), koje ukazuju na odsustvo simptoma ili umjerenu odnosno konstantnu izraženost simptoma. Dobijeni podaci su statistički obrađeni uz pomoć Microsoft Office paketa. **Rezultati:** Test- ratest korelacija na ukupnoj populaciji (78djece) iznosi 0.80(p>0,05), što je uskladu sa visokom pouzdanošću skale u stranim istraživanjima. Standardna devijacija(SD)na ukupan uzorak iznosi 3,25. Preadolescenti bolesne i kontrolne grupe u odnosu na spol imaju približno jednake varijacije p=0.941(p>0,05) te vrijednosti t testa (0.80) ukazuju da ne postoji statistički razlika između dječaka i djevojčica u izraženosti depresivnih simptoma, iako na osnovu ostalih parametara (iskaza roditelja te loše prilagođenosti u školi i porodici) kod dječaka je nešto više izražena.2,5% zdrave populacije djece je imalo rezultat 11 koji je graničan za zdravu populaciju i ukazuje na mogućnost pojave depresije, dok rezultat 13 (graničan), kao znak pojave depresivnog poremećaja, bio je jednako zastupljen u omjeru 1:1. Dobijena je slika multifaktorske strukture sa 3 najčešća faktora: loš

INCIDENCE OF DEPRESSIVE SYMPTOMS WITH PREADOLESCENTS

Zana Đulović Jusic[1], Sabina Ademović-Džambić[1], Nermina Đulović[1], Samira Salković-Srabović[1]
Public Health Institution, Health Center „Dr Mustafa Šehović“ Tuzla
Department of School Children/Department of Family Medicine

Objective: Testing incidence of depression with preadolescents in a relation to gender and chronic disorders; Quality care of children with depressive symptoms. **Methods:** A prospective study was conducted in two months with a sample of 78 children who were treated at the Department of School Children. Children were classified into two groups; control and ill. The method of data collection was used; Birleson Self-Rating Scale, data from the medical records, parents statements. Filling the scale, child had selected each particle one of the three claims (yes, sometimes and not), which indicated absence of symptoms or moderate or constant expression of symptoms. The data obtained were statistically processed using the Microsoft Office package. **Results:** The test-ratest correlation on the total population (78 total) was 0.80 which is in line with the high reliability of the scale in foreign surveys. The standard deviation (SD) of the total sample was 3.25.Ill and the control group of preadolescents were in a relation to gender had approximately equal variation p = 0.941 (p> 0.05) and the t test value (0.80) indicated that there were no statistical difference between the boys and girls in the expression of depression, although on the basis of other parameters (parents' testimonies and poor adaptation in school and family), the boys were more pronounced.2.5% healthy population of children had a score of 11 which was boundary for a healthy population and pointed to the possibility of depression, while the score 13 (borderline) as a sign of the appearance of a depressive disorder ranged from the scale

san, negativno raspoloženje i anhedonija. **Zaključak:** Urađeno istraživanje pokazalo je da dječaci imaju više izražene depresivne smetnje od djevojčica ali i da ne postoji jasna razlika u depresivnosti između kontrolne i bolesne grupe djece. Djetetu je potrebna u budućnosti psihološka podrška, ohrabrenje, bolja komunikacija između roditelja i školskih nastavnika kako bi se prevenirale ozbiljnije komplikacije u školskom, socijalnom i porodičnom životu.

Ključne riječi: preadolescenti, depresija, skala

was equally represented in a ratio of 1: 1.The image of a multifactorial structure was with 3 most common factors obtained: bad sleep, negative mood and anhedonia. **Conclusion:** The research showed that boys were had more pronounced depressive disorders than girls, but also that there were no difference with depression between the control and ill group of children. In the future children will needed psychological support, encouragement, better communication between parents and school teachers in order to prevent serious complications in school, social and family life.

Keywords: preadolescents, depression, scale

PROTEKTIVNI EFEKTI DOJENJA NA ZDRAVLJE DJETETA

Emina Hadžimuratović[1], Suada Branković[2], Admir Hadžimuratović[1], Ismeta Kalkan[1]
[1]Pedijatrijska klinika, Klinički Centar Univerziteta u Sarajevu, [2]Fakultet zdravstvenih studija, Bosna i Hercegovina

Uvod: Dojenje je jedini prirodni način prehrane dojenčadi koji osigurava sve nutritivne sastojke potrebne za zdrav rast i razvoj. Ljudsko mlijeko osigurava specifične i nespecifične faktore koji imaju kratkoročne i dugoročne posljedice na zdravlje djeteta. **Cilj:** Sistematski revidirati dokaze veze između dojenja i učestalosti proljeva u dojenčadi kao kratkoročni učinak i dojenja te pretilost i visokog krvnog pritiska kod djece i odraslih kao dugoročne učinke dojenja. **Materijali i metode:** Pretražili smo Medline (januar 2013. do januar 2018) kombinirajući pojam dojenja s pojmovima proljev, pretilost i visok krvni pritisak. Naslovi i sažetci studija koji su prvobitno odabrani bili su skenirani kako bi se isključili oni koji su irelevantni. Potpuni tekst preostalih studija je preuzet i relevantni članci su identificirani. Koristili smo fiksni model i model slučajnog učinka za klasificiranje podataka. **Rezultati:**

PROTECTIVE EFFECTS OF BREASTFEEDING ON CHILD HEALTH

Emina Hadžimuratović[1], Suada Branković[2], Admir Hadžimuratović[1], Ismeta Kalkan[1]
[1]Pediatric Clinic, University Clinical Center Sarajevo, [2] Faculty of Health Studies, University of Sarajevo, Sarajevo, Bosnia and Herzegovina

Introduction: Breastfeeding is the only natural way of feeding infants which ensures all nutritients needed for healthy growing and development. Human milk provides specific and non-specific factors that have short and long term consequences on child health. **Aim:** To systematically review evidence of the association between breastfeeding and incidence of diarrhea in infants as a short term effect and breastfeeding and obesity and high blood preassure in children and adults as a long term effects of breastfeeding. **Material and Methods:** We searched Medline (January, 2013 to January 2018) combining the term breastfeeding with terms diarrhea, obesity and high blood preassure. The titles and abstracts of studies initially selected were scanned to exclude those that were obviously irrelevant. The full text of the remaining studies was retrieved

Rizik od morbiditeta od proljeva bio je niži kod onih dojenčadi koja su dojila (skupni relativni rizik 0,43 (95% intervala pouzdanosti: 0,25; 0,78). Dojenje je također snižavalo rizik hospitalizacije zbog proljeva (skupni relativni rizik: 0,25 (95% interval pouzdanosti: 0,15 - 0,35)) i smrtnost (skupni relativni rizik: 0,22 (95% interval pouzdanosti: 0 , 12-0,41)). Srednji učinak dojenja na incidenciju pretilosti bio je smanjenje od 24%, a krvni pritisak bio je niži za - 0,71 (95% interval pouzdanosti: -1,24 - -0,19) za sistolički i -0,27 (-0,64-0 , 09) za dijastolički tlak. **Zaključak:** Rezultati ukazuju na zaštitni učinak dojenja kod proljeva u dojenčadi, kao i kod djece i odraslih od pretilosti i visokog krvnog tlaka. Dugotrajno dojenje izravno je povezano s smanjenim rizikom od ovih stanja. Istraživanja pokazuju da ljudsko mlijeko ima dalekosežne učinke i da optimalni razvoj ovisi o provođenju dojenja. Buduća istraživanja trebaju uzeti u obzir razlike podataka za ekskluzivno dojenje, mješovito hranjenje i hranjenje formulom.

Ključne riječi: dojenje, proljev, pretilost, krvni tlak

and relevant articles were identified. To pool the studies estimates, we used a fixed and a random-effects model. **Results:** The risk of morbidity from diarrhea was lower among those infants who were breastfed (pooled relative risk 0.43 (95% confidence interval: 0.25; 0.78)). Breastfeeding also decreased the risk of hospitalization from diarrhea (pooled relative risk: 0,25 (95% confidence interval: 0,15 - 0,35)) and diarrhea mortality (pooled relative risk: 0,22 (95% confidence interval: 0,12 – 0,41)). The mean effect of breastfeeding on incidence of obesity was 24% reduction, and blood preasure was decreased – 0.71 (95% confidence interval: -1,24 - -0,19) for systolic and -0,27 (-0,64 – 0,09) for diastolic pressure. **Conclusion:** The results indicate a protective effect of breastfeeding for diarrhea in infants, as well as childhood and adult obesity and high blood preassure. Prolonged breastfeeding is directly related to a decreasing risk of these conditions. Studies show that human milk has far-reaching effects and optimal development depends heavily on its provision. Future research should distinguish the data between exclusive breastfeeding, mixed feeding, and exclusive formula feeding.

Keywords: breastfeeding, diarrhea, obesity, blood preassure

ENDOSKOPSKI TRETMAN VEZIKOURETERALNOG REFLUKSA: ISKUSTVO SA UKC TUZLA

Amir Halilbašić, Edin Husarić, Nešad Hotić
Klinika za dječije bolesti, Univerzitetski klinički centar Tuzla, Bosna i Hercegovina

Cilj: Cilj studije je bio da se istraže i prikažu rezultati endoskopskog tretmana vezikoureteralnog refluksa (VUR) sa dekstranomer-hijaluronskom kiselinom. **Metode:** U ovu studiju je uključeno 57 pacijenata (83 uretera) sa vezi-

ENDOSCOPIC TREATMENT OF VESICOURETERAL REFLUX: EXPERIENCE FROM UKC TUZLA

Amir Halilbašić, Edin Husarić, Nešad Hotić,
Clinic for Children's Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Aim: The aim of the study was to investigate and present the results of endoscopic treatment od vesicoureteral reflux (VUR) with dextranomer-hyaluronic acid. **Methods:** This study included 57 patients (83 ureter) with vesicoureteral reflux, aged between 1 and 14

koureteralnim refluksom, starih između 1 i 14 godina (prosječna dob od 5,5 godina) koji su liječeni sa submukozalnom intraureteralnom injekcijom dekstranomer/hijaluronske kiseline u našoj instituciji u periodu od 11.2014 – 12.2017. godine. Operativni protokol je bio jednak za sve pacijente. Dextranomer/hijaluronska kiselina je ubrizgivana po HIT i STING metodama. Postoperativno su pacijenti klinički praćeni redovnim ultrazvučnim kontrolama i urinokulturama. **Rezultati:** Ženskih pacijenata je bilo 46 (80,8%), a 11 (19,2%) muškog spola. Unilateralni VUR je imalo 35 (61,4%) , a bilateralni 22 (38,6%) pacijenata. Kod 50 (87,7%) pacijenata nisu zabilježene postoperativne urinarne infekcije ili pogoršanja ultrazvučnog nalaza što se smatra uspješnim rezultatom liječenja. Kod 4 pacijenta (7%) je zabilježena postoperativna obstrukcija uretera koja se spontano povukla kroz 48 sati. Kod 3 (5,3%) pacijenta je verificiran recidiv VUR-a. Nije bilo komplikacija vezanih za proceduru. **Zaključci:** Endoskopki tretman VUR-a predstavlja sigurnu, efektivnu i minimalno invazivnu metodu liječenja VUR-a kod djece koja reducira patnju djeteta, trajanje medikamentoznog tretmana i smanjuje troškove liječenja.

Ključne riječi: Vesicoureteral Reflux Cystoscopic Surgery

years (mean age of 5.5 years) treated with submucosal intraurethral injection of dextranomer-hyaluronic acid in our institution in period 11.2014 – 12.2017. The operation protocol was the same for all patients. Dextranomer-hyaluronic acid was injected usin HIT and STING methods. Postoperatively patients are clinically monitored by regular ultrasound controls and urinary cultures. **Results:** In study were 46 female patients (80.8%) and 11 (19.2%) male patients. Unilateral VUR had 35 (61.4%) and bilateral 22 (38.6%) patients. In 50 (87.7%) subjects did not experience postoperative urinary infection or ultrasonographic signs of deterioration which is considered as a successful outcome of treatment. In 4 patients (7%) there was postoperative ureteral obstruction that spontaneously retracted for 48 hours. In 3 (5.3%) patients, VUR recurrence was verified. There were no complications related to the procedure. **Conclusion:** Endoscopic VUR treatment is a safe, effective and minimally invasive method of treating VUR in children that reduces the child's suffering, duration of medication treatment, and reduces the cost of treatment.

Keywords: Vesicoureteral Reflux Cystoscopic Surgery

ZNAČAJ SCREENINGA U OTKRIVANJU REFRAKCIJSKIH GREŠAKA

Meliha Halilbašić[1]
Amra Nadarević Vodenčarević[2], Vahid Jusufović[1], Svjetlana Terzić1, Aida Drljević[2]
Mersiha Sinanović[1], Halida Hadžiavdić[1]
[1]Univerzitetsko Klinički Centar Tuzla, Klinika za očne bolesti, Tuzla, Bosna i Hercegovina, [2]Dom Zdravlja Tuzla, Očno odjeljenje, Tuzla, Bosna i Hercegovina

THE IMPORTANCE OF SCREENING IN FINDING REFRACTIVE ERRORS

Meliha Halilbašić[1],
Amra Nadarević Vodenčarević[2], Vahid Jusufović[1], Svjetlana Terzić[1], Aida Drljević[2],
Mersiha Sinanović[1], Halida Hadžiavdić[1]
[1]Clinic for Eye Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina
[2] Public Health Institution, Health Center „Dr Mustafa Šehović" Tuzla, Department for Eye Diseases, Tuzla, Bosnia and Herzegovina

Cilj: Utvrditi učestalosti različitih vrsta refrakcijskih grešaka kod zdrave predškolske i školsle djece na području općine Tuzla. **Metode:** Istraživanjem su obuhvaćena sva predškolska djeca iz 8 obdaništa i školska djeca u dobi od 7 do 15 godina iz 24 osnovne škola, kao i djeca iz Centra za rehabilitaciju i Doma Zdravlja Tuzla u vremenskom periodu od novembra 2014. do novembra 2015. godine.**Rezultati:** Na ukupnom uzorku (n=145), odnosno 290 očiju najzastupljenija refrakcijska greška je astigmatizam koji je evidentiran kod 52,4% očiju. Na uzorku od (n=18) ispitanika predškolske dobi odnosno 36 očiju, najčešća refrakcijska greška je jedan od oblika astigmatizma, koji je evidentiran kod 52,8% očiju, potom sljedi dalekovidnost 25% očiju. Na uzorku od (n=127) ispitanika školske dobi odnosno 254 oka, najčešća refrakcija greška je jedan od oblika astigmatizma 52,4% oka, potom slijedi kratkovidnost 31,7% oka. **Zaključak:** S rastom djece opaža se postepeni pad hipermetropije, porast miopije, miopnog i mješovitog astigmatizma. Masovni skrining programi su potrebni kako bi se na vrijeme otkrila refrakcijska greška.

Ključne riječi: refrakcijske greške, prevencija, miopija, hipermetropija, astigmatizam, slabovidnost

Aim: The purpose of this study is to determine the frequency of different types of refractive errors in healthy preschool children and school children in the municipality of Tuzla. **Methods:** This study covers all pre-school children from 8 daycare centers and school children aged 7 to 15 from all 24 elementary schools in Tuzla, as well as children from the Rehabilitation Center and Health Care Center Tuzla in the period from November 2014 till November 2015. **Results:** In the total sample of children (n=145), or 290 eyes, the most common refractive error was astigmatism, which was recorded in 52,4% of eyes. In the sample of preschool children (n=18) or in 36 eyes, the most common refractive error was astigmatism which was recorded in 52,8%, eyes, followed by hypermetropia 25% eyes. In the sample of school children (n=127) or 254 eyes, the most common refractive error was astigmatism which was recorded in 52,4% eyes, follow by myopia 31.7%. **Methods:** With the growth of children there is a observed a gradual decline in hyperopia and increase in myopia with myopic and mixed astigmatism. Mass screening is required for early diagnosis and treatment of children with refractive errors.

Key words: Refractive errors, prevention, myopia, hypermetropia, astigmatism, amblyopia

PSIHOSOMATSKI SIMPTOMI RANIH ADOLESCENATA I POVEZANOST SA SOCIODEMOGRAFSKIM RIZIKO FAKTORIMA

Jasmin Hamidovic[1], Lejla Dostovic Hamidovic[2], Zihnet Selimbasic[1], Mevludin Hasanovic[1]
Klinika za psihijatriju,
[1]Univerzitetski klinički centar Tuzla,
Klinika za dječije bolesti,
[2]Univerzitetski klinički centar Tuzla
Bosna i Hercegovina

Uvod: Posljednje desetljeće psihosomatski simptomi su sve učestaliji u populaciji djece i mladih. Dijagnostika ovih poremećaja kod djece ponekad je vrlo teška zbog toga što su prisutne najčešće polisimptomatske kliničke slike. Rast i razvoj djece i uticaj sociodemografskih faktora predstavljaju određene rizike koji direktno ili indirektno mogu uticati na mentalno zdravlje. **Cilj rada:** Cilj istraživanja je da utvrdimo učestalost i vrstu psihosomatskih simptoma kod ranih adolescenata, te njihovu povezanost sa sociodemografskim faktorima rizika. **Ispitanici i metode:** Analizirali smo grupu od 240 ranih adolescenata (11-15 godina) sa područja Tuzlanskog kantona, Bosne i Hercegovine, u opštoj populaciji. Uzorak je odabran zato što je rani adolescentni period vulnerabilan u odrastanju djece i psihičkom razvoju. Za procjenu psihosomatskih simptoma, korišten je Upitnik psihosomatskih simptoma (PS). Podaci su obrađeni metodom deskriptivne statistike. Za procjenu povezanosti sociodemografskih faktora rizika i psihosomatskih simptoma korišten je Pearsonov test korelacije. **Rezultati:** Prema upitniku psihosomatskih simptoma (PS), dobijeni rezultati pokazuju da su gastrointestinalni, pseudoneurološki i bolni simptomi najčešće prisutni psihosomatski simptomi kod ranih adolescenata. Rezultati povezanosti sociodemografskih faktora rizika i psihosomatskih simptoma, pokazali su da nizak ekonomski status porodice, dovodi

PSYCHOSOMATIC SYMPTOMS IN EARLY ADOLESCENTS AND ASSOCIATION WITH SOCIODEMOGRAPHIC RISK FACTORS

Jasmin Hamidovic[1], Lejla Dostovic Hamidovic[2], Zihnet Selimbasic[1], Mevludin Hasanovic[1]
[1]Clinic for Psychiatry, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina
[2]Clinic for Children's Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Introduction: For the last decade, psychosomatic symptoms are more common in the population of children and young people. The diagnosis of these disorders in children is sometimes difficult because most polysymptomatic clinical presentations occur. The growth and development of children and the impact of sociodemographic factors represents certain risks directly or indirectly may affect mental health. **Aim:** The aim is to determine the frequency and type of psychosomatic symptoms in early adolescents, and association with sociodemographic risk factors. **Subject and metods:** We analyzed a group of 240 early adolescents (11-15 years) from the area of Tuzla Canton, Bosnia and Herzegovina, in the general population. The sample was selected because it is early adolescence vulnerable period in the growing up of children and and psychological development. For the assessment of children's psychosomatic symptoms, the Psychosomatic symptoms questionnaire (PS) is used. Data were processed by descriptive statistics. For the assessment association between sociodemographic risk factors and psychosomatic symptoms in early adolescents we used Pearson correlation test. **Results:** According (PS), the obtained results showed that gastrointestinal, pseudoneurological and painful symptoms are most commonly present in early adolescents. The results of correlation sociodemografic risk factors and psychosomatic symptoms, showed that low family economic status, leads to a higher in-

do većih učestalosti bolnih simptoma (glavobolja) i kardiovaskularnih simptoma kod ranih adolescenata (p<0,05). Život u ruralnom okruženju povezan je sa većom učestalošću respiratornih simptoma (prehlade), kardiovaskularnih simptoma (prekomerno znojenje) i gastrointestinalnih simptoma (problema sa hranom) (p <0,05). Djeca nezaposlenih majki češće pokazuju nedostatak energije i umora (p <0,05). Poremećeni porodični odnosi su značajno povezani sa febrilnošću kod ranih adolescenata (p <0,05). **Zaključci:** Rani adolescenti pokazuju značajan nivo različitih psihosomatskih simptoma. Postoji značajna korelacija između sociodemografskih faktora rizika (zaposlenost majke, mjesto življenja, ekonomski status porodice, poremećeni porodični odnosi) i psihosomatskih simptoma kod ranih adolescenata.

Ključne riječi: psihosomatski simptomi, sociodemografski faktori.

cidence of painful symptoms (headaches) and cardiovascular symptoms (p <0.05). Living in a rural environment is associated with a higher incidence of respiratory symptoms (colds), cardiovascular symptoms (excessive sweating) and gastrointestinal symptoms (feeding problems) (p <0.05). Children of unemployed mothers more often show a lack of energy and fatigue (p <0.05). Disturbed family relationships are significantly associated with febrility (p <0.05). **Conclusion:** Early adolescents showed significant level of different psychosomatic symptoms. There is a significant correlation between sociodemographic risk factors (employed mothers, place of living, the economic status of the family, disturbed family relationships) and psychosomatic symptoms in early adolescents.

Key words: psychosomatic symptoms, sociodemografic factors.

AKUTNI SKROTUM – DIFERENCIJALNA DIJAGNOZA I TRETMAN

Nešad Hotić, Amir Halilbašić, Elvira Konjić, Emir Rahmanović, Sanimir Suljendić
Klinika za dječije bolesti Tuzla, Bosna i Hercegovina

Cilj: Akutni skrotum u djece i adolescenata predstavlja hitno medicinsko stanje. Neadekvatna evaluacija i kašnjenje u dijagnozi i tretmanu može dovesti do ireverzibilnog oštećenja koje može uključivati i gubitak testisa. Različita stanja mogu prouzrokovati kliničku sliku akutnog skrotuma. Ishemija testisa razvija se u oko 20% slučajeva. **Metode:** Ovaj prikaz predstavlja retrospektivnu studiju uzroka akutnog skrotuma u pacijenata operisanih u Klinici za dječije bolesti u periodu 2004-2017. godine. **Rezultati:** Tokom posmatranog perioda operisano je 165 dječaka, prosječne ži-

ACUTE SCROTUM – DIFFERENTIAL DIAGNOSIS AND TREATMENT

Nesad Hotic, Amir Halilbasic, Elvira Konjic, Emir Rahmanovic, Sanimir Suljendic
Clinic for Children's Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Background: The acute scrotum in childhood or adolescence is a medical emergency. Inadequate evaluation and delays in diagnosis and treatment can result in irreversible harm, up to and including loss of a testis. Various diseases can produce this clinical picture. The testis is ischemic in only about 20% of cases. **Methods**: This review is based on a retrospective study of patients operated for acute scrotum at the Pediatric Clinic Tuzla in the period 2004-2017. **Results:** During the period under review we operated 165 boys in average age of 8 years (1-15). The cause of acute

votne dobi 8 godina (1-15) . Uzrok akutnog skrotuma u 80% slučajeva je bila torzija Morgagnijeve cista, a torzija testisa je bila uzrok u 20 % slučajeva. U slučajevima torzije testisa u 30.34% načinjena je orhiektomija. **Zaključak:** Fizikalni pregled i pravilna anamneza omogućavaju adekvatnu evaluaciju uzroka akutnog skrotuma u djece i adolescenata. Svaki akutni skrotum treba smatrati torzijom testisa dok se drugačije ne dokaže.

Ključne riječi: akutni skrotum, torzija testisa, orhiektomija

scrotum in 80% cases was the torsion Morgagnijeve cysts and testicular torsion was the cause of 20% of the cases. Since 20% of cases of testicular torsion in 30.34% underwent orchiectomy. **Conclusion:** Physical examination and properly anamnesis enable adequate evaluation of the acute scrotum in childhood and adolescence. Every acute scrotum should be considered a testicular torsion unless otherwise proven

Key words: acute scrotum, testicular torsion, orchiectomy

ULOGA EHOKARDIOGRAFIJE U JEDINICI NEONATALNE INTENZIVNE NJEGE

Ibrahimović Jasminka
Klinika za dječije bolesti, UKC Tuzla, Tuzla
Bosna i Hercegovina

Uvod: Ehokardiografija je jednostavna i bezbolna dijagnostička metoda koja omogućuje ispitivanje morfološkog i hemodinamskog kardiološkog stanja. U pedijatrijskoj populaciji bazira se uglavnom na otkrivanju urođenih anomalija srca. **Cilj:** Analizirati značaj ehokardiografskog pregleda u jedinici neonatalne intenzivne njege, te ulogu koju ima u dijagnostici urgentnih stanja, u cilju što bržeg zbrinjavanja teško oboljelog i životno ugroženog novorođenčeta. **Metode:** Retrospektivna analiza medicinske dokumentacije kardiološke ambulante i Jedinice intenzivne njege Klinike za dječije bolesti UKC Tuzla, u periodu od 01.01.2015-31.12.2017. **Rezultati:** U proteklom trogodišnjem periodu (od 01.01.2015.-31.12.2017.) u Jedinici intenzivne njege Klinike za dječije bolesti UKC Tuzla liječeno je 759 novorođenčadi, od toga 442 prematurusa. Kardiološki pregled obavljen je u 333 novorođenčeta (43,8%). Prosječna dob pregledanih je bila 7,8 dana. U prvom danu života pregladno

ROLE OF ECHOCARDIOGRAPHY IN THE NEONATAL INTENSIVE CARE UNIT

Jasminka Ibrahimović
Clinic for Children's Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Introduction: Echocardiography is a simple and painless method that enables the examination of the morphological and haemodynamic cardic state. In the pediatric population is mainly based on the discovery of congenital heart disease. **The aim** of the study was to analyze the significance of echocardiogaphic examination in the neonatal intensive care unit and the role played in diagnosing urgent conditions, with a goal of providing faster care for the seriously ill and newborns in life-threatening state. **Methodes:** Retrospective analysis of medical documentation of cardiologic ambulances and neonatal intensive care unit of Pediatric Clinic, University Clinical Center Tuzla during the period 01.01.2015.- 31.12.2017. **The results:** Over the past three years (01.01.2015.-31.12.2017.) in the neonatal intensive care unit of Pediatric Clinic, University Clinical Center Tuzla, 759 newborns were treated, of whom 442 were prematurus. A cardiological examination was

je 77 novorođenčadi (23,1%). Uredan nalaz na srcu imalo je 83 novorođenčadi (24,9%). Obrazac tranzitorne cirkulacije našli smo u 194 novorođenčeta (58,2%). Urođenu anomaliju srca imalo je njih 56 (16,8%), a od toga 34 je imalo kompleksnu urođenu anomaliju srca. U kardiohirurški centar transportovano je 17 novorođenčadi. U neonatalnom periodu zbog urođene anomalije srca exitiralo je 13 djece. **Zaključak:** Primjena ehoakrdiografije nezaobilazna je metoda u dijagnostici teško bolesnog novorođenčeta. Prikazom morfologije srca, njegovog smještaja i odnosa sa drugim organima, pomažemo razrješavanju drugih kliničkih dilema. Hemodinamske promjene na srcu, koje nalazimo, naročito kod novorođenčadi sa respiratornom insuficijencijom, smjernica su ordinirajućem neonatologu u daljem radu. Pregled u sklopu preoperativne primpreme novorođenčeta sa urođenom anomalijom nekog drugog organskog sistema, od velike je pomoći i dječijem hirurgu. Zato, u svakodnevnom timskom radu sa novorođenačkom populacijom, a naravno i sa ostalom, od velike je koristi ehokardiogafski pregled, za koji je potrebno imati adekvatnu savremenu opremu kao i educiran kadar.

Ključne riječi: ehokardiografije, novorođenče, jedinica neonatalne intenzivne njege

performed on 333 newborns (43,8%). The average age of the review was 7,8 days. In the first day of life 77 newborns were screened (23,1%). The total heart healthy had 83 newborns (24,9%). Transitory circulation had 194 newborns (58,2%). Congenital heart disease had 56 newborns (16,8%), of which 34 newborns had a comlicated congenital heart disease. Seventeen newborns were transported in cardio surgery center. In the neonatal period, 13 newborns died because of a congenital heart disease. **Conclusion:** Echocardiography is an unavoidable method in the diagnosis of a seriously ill newborn. Depicting the morphology of the heart, its location and relationships with other ograns, we help to resolve the dangers of the kinship dilemma. Hemodynamic heart changes found in patients with respiratory insuffitiency, the guidelines are by ordering a neonatologist in further work. An overview of the preoperative procedure of the newborn with the anomaly of another organ, is of great help to the child'ssurgeon. In everyday team work with newborns, and with the rest, it is of grest use to use a cardiographic examination, for which adequate modern equipment and educated staff are necessary.

Key words: echocardiography, newborn, neonatal intensiv care unit

NAŠE ISKUSTVO U HIRUŠKOM TRETMANU KONGENITALNE ANIRIDIJE

Jusufović Vahid[1]
Zvorničanin Jasmin[1], Mušanović Zlatko[1], Amra Nadarević Vodenčarević[2]
[1]Univerzitetsko Klinički Centar Tuzla, Klinika za očne bolesti, Tuzla,
[2]Dom Zdravlja Tuzla, Očno odjeljenje, Tuzla, Bosna i Hercegovina

Cilj: Prikazati tretman dječaka sa kongenitlnom aniridijom i kataraktom. **Metode:** Dje-

CASE REPORT: OUR EXPERIENCE WITH SURGICAL TREATMENT OF CONGENITAL ANIRIDIA

Jasmin Zvorničanin[1], Zlatko Mušanović[1], Amra Nadarević Vodenčarević[2]
[1]Clinic for Eye Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina
[2]Public Health Institution, Health Center „Dr Mustafa Šehović" Tuzla, Department for Eye Diseases, Tuzla, Bosnia and Herzegovina

čak od 5 godina javlja se na UKC Tuzla. Pregledom se utvrdi vidna oštrina na desnom oku 0,08 bez korekcije, dok na lijevom oku 0,7 sa korekcijom, evidentira se obostrana kongenitalna aniridija sa kataraktom. **Rezultati:** Uradi se fakoemulzifikacija, sa implantacijomkapsularnog tenzionog prstena, te se implantira vještački iris u kapsularnu vreću. Operacija je protekla uredno, a rani postoperativni oporavak bio je uspješan bez znakova razvoja keratopatije i sa normalnim vrijednostima intraokularnog tlaka. Šest mjeseci nakon operacije vidna oštrina na desnom oku poboljšana je na 0,9 sa korekcijom. **Zaključak:** Ekstrakcija katarakte sa ugradnjom IOL i vještačkim irisom u jednom aktu može se upotrijebiti u tretmanu kongenitalne aniridije i katarakte, te dovesti do značajnog poboljšanja vidne oštrine. Estetički rezultati su zadovoljavajući i fotofobija je svedena na minimum.

Ključne riječi: aniridia, kongenitalna katarakta, vještački iris

Aim: To present a treatment of a boy with a congenital aniridia associated with cataract. **Methods:** A 5 year old boy was presented at UCC Tuzla. Clinical examination revealed visual acuity of 0.08 without correction in right and 0.7 with correction in left eye and examination showed aniridia associated with cataract. **Results:** The patient underwent phacoemulsification, implantation of capsular tension ring and Artificial Iris implant in the capsular bag. Phacoemulsification went uneventful and early postoperative recovery was successful with no signs of keratopathy development and normal values of intra ocular pressure. Six month after the operation visual acuity in the right eye improved to 0.9 with correction. **Conclusions:** Small incision cataract extraction with IOL and Artificial Iris implantation in one procedure can be used to correct congenital aniridia and cataract with significant visual function improvement. Esthetic results are satisfactory and photophobia is reduced to minimum.

Key words: aniridia, infantile cataract, artifical iris

NEURORAZVOJNI ISHOD DJECE SA ANOMALIJAMA PUPKOVINE PRI PORODU U DOBI OD JEDNE GODINE

Edina Karabeg[1], Adi Karabeg[2], Enes Karabeg[1], Biserka Rešić[3], Jasminka Rešić Karara[4]
[1]Opća bolnica Sanski Most
[2]Ilmtalklinik GmbH Krankenhaus Pfaffenhofen
[3]Medicinski Fakultet Sveučilišta u Splitu
[4]Klinika za ženske bolesti i opstetriciju, KBC Split

Cilj rada je bio ispitati neurorazvojni ishod kod djece sa izolovanom patologijom pupkovine u dobi od 12 mjeseci. **Metode i ispitanici istraživanja:** Istraživanje je retrospektivno-prospektivno sprovedeno u Kantonalnoj bolnici „Dr Irfan Ljubijankić“

NEURODEVELOPMENTAL OUTCOME IN CHILDREN AT THE AGE OF 1, IN WHICH AT DELIVERY UMBILICAL CORD ANOMALIES OCCURED

Edina Karabeg[1], Adi Karabeg2, Enes Karabeg1, Biserka Rešić[3], Jasminka Rešić Karara[4]
[1]General Hospital Sanski Most
[2]Ilmtalklinik GmbH Hospital Pfaffenhofen
[3]Faculty of Medicine, University of Split
[4]Department of Gynecology and Obstetrics, KBC Split

Objective od the study: to examine neurodevelopment outcome in children with isolated umbilical cord patology at the age of 12 months. **Methods and subjects of research:**

u Bihaću i Općoj bolnici u Sanskom Mostu u razdoblju od 2003. do 2013. godine.U istraživanje je uključeno 119 djece iz urednih trudnoća i rođenih na termin s anomalijama pupkovine. Kontinuirano su naurorazvojno praćena od novorođenačke dobi do kraja 1. godine života. Neuromotorni ishod definirali smo prema Towenu a psihomotornu procjenu prema Minhenskoj funkcionalnoj skali za 1. godinu života. Kontrolna skupina bila su djeca bez anomalija uzeti prema istim kriterijima. U obradi kvalitativnih varijabli će se rabiti X2 test i logistička regresija, a kao mjera ishoda, omjer izgleda- OR (95 % CI). **Rezultati:** U skupini djece s anomalijama pupkovine je statistički značajno odstupanje u neurorazvoju (p< 0.001) dok su djeca u skupini bez anomalija pupkovine pokazala uredan neurorazvoj (p< 0,001). **Zaključak:** Izgled za javljanje patološkog neurološkog ishoda u skupini djece s anomalijama pupkovine je statički značajno povećan, nego u skupini djece bez anomalija pupkovine (p<0,001). Važnost ranog otkrivanja anomalije pupkovine je od suštinskog značaja u cilju što ranijeg otkrivanja odstupanja u neurorazvoju, te uključivanja u habilitacione tretmane a time boljeg neurorazvojnog ishoda djece.

The study was a retrospective-prospective, conducted at the Cantonal Hospital "Dr. Irfan Ljubijankić" in Bihac and the General Hospital in Sanski Most in the period from 2003 to 2013. Study included 119 children from regular pregnancies, delivered at term, where umbilical cord anomalies occured. Their neurodevelopment was continuously monitored from the birth until the age of 12 months. Neuromotor outcome has been defined according to Towen and psychomotor assessment by the Munich functional scale for the first year of life. Control group consisted of children without anomalies fullfilling the same criteria. When processing qualitative variables the X2 test and logistic regression are to be used while OR (95 % CI) as measure of the outcome. **Results:** In the group of children with umbilical cord anomalies is statistically significant deviation in the neurodevelopment (p<0.001) while children from the group without umbilical cord anomalies showed regular neurodevelopment (p<0.001). **Conclusion:** The appearance of detection of pathological neurological outcome in children with umbilical cord anomalies is statistically significantly increased, which is not the case in the group of children without umbilical cord anomaly (p<0,001). The importance of early detection of umbilical cord abnormalities is of essential importance for early detection of deviations in neurodevelopment as well as inclusion of respective children into habilitation treatments and thus their better neurodevelopment.

NEPALPABILNI TESTIS: DIJAGNOSTIKA I LAPARASKOPSKI TRETMAN

Karavdić Kenan
Klinika za dječiju hirurgiju, Klinički centar Univerziteta Sarajevo

Uvod: Kriptorhizam je najčešća genitourinarna anomalija kod dečaka sa incidencom od 3%. Definicija kriptorhizma je da testis nije u skrotumu i da se ne može spustiti u skrotum. Oko 20% nespuštenih testisa je nepalpabilno. Testis može biti nepalpabilan zbog intrauterine smrti (iščezli testisa), agenezije (istinska monorhija), intra-abdominalne lokacije ili ingvinalne lokacije sa različitim stupnjem displazije ili atrofije. **Cilj:** Isticanje važnosti laparaskopije u dijagnozi i tretmanu nepalpabilnih nespuštnih testisa. **Metode:** U periodu 2014.-2017, prospektivno je evaluirano 17 pacijenata sa nepalpabilnim testisomtretirano laparaskopski.Starost pacijenata u vrijeme operacije je varirala od 9 mjeseci do 6 godina sa srednjom starosti 3,07 godina. Vitalnost testisa i lokacija je evaluirana fizikalnim pregledom i Doppler ultrasonografijom nakon 1 i 3 mjeseca after 1 and 3 Rezultati: 17 pacijenata sa nepalpabilnim testisom je eksplorisano laparaskopskom procedurom. 5 pacijenata (29,41%) tretirano je kombinovano. Laparaskopijom i otvorenom orhidopeksijom , 5 (29,41%) sa laparaskopskom orhidopeksijom u 2 etape i kod 7 (4.1%) je dijagnostikovan „iščezli“ testis sa detekcijom slijepo završenih ductus deferensa i spermatičnih krvnih sudova u toku laparaskopije.Fizikalnim pregledom i Doppler praćenjem pokazano je da je svih 10 pacijenata sa orchidopexiom imalo vitalne testise (41,18%) gdje su 9 od 10 bili locirani u donjem scrotumu (90%) a samo 1 od 10 (10%) u gornjem scrotumu tokom follow-upa. **Zaključci:** Laparoskopija je pouzdana tehnika u dijagnostici i tretmanu nespuštenog intraabdominalnog testisa sa visokom stopom uspjeha i stopom preživljavanja testisa. Danas

NON-PALPABLE TESTIS: DIAGNOSTIC AND LAPARASCOPIC TREATMENT

Kenan Karavdić
Clinic for Pediatric Surgery, University Clinical Center of Sarajevo

Introduction: Cryptorchidism is the most common genitourinary anomaly in boys with an incidence of 3% The definition of cryptorchidismis that a testicle is not within the scrotum and cannot be manipulated into the scrotum. 20% of undescended testis are nonpalpable. Testis may be non-palpable because of intra-uterine demise (vanishing testis), agenesis (true monorchia), intra-abdominal location, or inguinal location with a different grade of dysplasia or atrophy. **Purpose:** Highlighting the importance of laparoscopy in the diagnosis and treatment of non-palpable undescended testis. **Methods:** Between 2014 and 2017, 17 patients with non-palpable testis were evaluated prospectively by laparoscopy. The age of the patients at the time of surgery varied from 9 months to 6 years with a mean age of 3,07 years. Testicular viability and location were evaluated by physical examination and Doppler ultrasonography after 1 and 3 months.**Results:** 17 testicular units, were explored by laparoscopic procedure. 5 testicular units (29,41%) were treated by combination, one-stage laparoscopic and open orchiopexy, 5 (29,41%) were treated by two-stage laparoscopic orchiopexy and 7 (4.1%) diagnosed as vanishing testis with detection of blind end spermatic vessels and vas deferens during laparoscopy. Physical examination and Doppler study demonstrated that 10 of 10 testes (41,18%) were viable and 9 of 10 (90%) were located in the lower scrotum and 1 of 10 (10%) in the upper scrotum at the end of follow-up. **Conclusions:** The laparoscopy is a reliable technique for diagnosis and treatment of the non-palpable intra-abdominal testis

je laparoskopija zlatni standard u liječenju nepalpabilnog nespuštenog testisa.

Ključne riječi: testis, nespušten, laparaskopija

with high success and survival rates of the testes. Nowadays laparoscopy is a gold standard in the treatment of non-palpable undescended testis.

Keywords: Testis; Undescended; laparoscopic;

POGREŠNO DIJAGNOSTIKOVANA UPALA SLIJEPOG CRIJEVA KOD DJECE

Kastriot Haxhirexha[1,2], Agron Dogjani[2], Lutfi Zylbehari[2], Ferizat Dika – Haxhirexha[2], [1]Klinička Bolnica Tetovo, [2]Medicinski fakultet Univerziteta u Tetovu, Makedonija

Upala slijepog crijeva je jedna od najčešćih hitnih abdominalnih operacija kod djece. Pravovremena dijagnoza i apendektomija mogu spriječiti rane i kasne postoperativne komplikacije. **Metode:** ovo istraživanje je retrospektivni pregled kod sve djece koja su dijagnostikovana sa akutnim apendicitisom u našem hitnom odjelu u periodu januar 2016- januar 2017. Usporedili smo kliničke karakteristike i rezultate ispitivanja između dvije skupine bolesnika- onih koji su ispravno dijagnostikovani i koji su bili operisani, i onih koji su pogrešno dijagnostikovani te bili kasnije operisani. **Rezultati:** u ovo istraživanje uključeno je 59 djece u dobi ispod 16 godina koja su primljena na našu kliniku i operisana zbog akutnog apendicitisa. Od tog broja, njih 55 je hospitalizovano nakon prve kontrole, dok je njih 5 nakon početne kontrole otpušteno kući. Bolesnici sa pogrešnim dijagnostikovanjem su se vratili na naše odjeljenje u intervalu manjem od 20 nakon prve kontrole. U poređenju sa pacijentima kod kojih je dijagnoza načinjena ispravno, pacijenti s pogrešnom dijagnozom su uopšteno imali niži nivo leukocita, CRP i temperaturu. Pri prvom kliničkom pregledu kod ovih pacijenata se pokazao niži stepen

MISDIAGNOSED APPENDICITIS IN CHILDREN

Kastriot Haxhirexha[1,2], Agron Dogjani[2], Lutfi Zylbehari[2], Ferizat Dika – Haxhirexha[2]
[1]Clinical Hospital – Tetovë
[2]Medical Faculty – University of Tetovë

Appendicitis is the one of the most common emergency abdominal operation in children. Timely diagnosis and appendectomy can prevent early and late postoperative complication. **Methods:** this study is a retrospective review of all children diagnosed with acute appendicitis in our emergency department between January 2016 – 2017. We have compared the clinical features and the results of examinations between two group of patients - those who were diagnosed correctly and have been operated, and those who were misdiagnosed and operated later. **Results:** in this study are included fifty-nine children aged under sixteen years, admitted in our clinic and operated because of acute appendicitis. Fifty five of them were hospitalized after the first control, whereas five others after the initial control were discharged at home. The misdiagnosed patients were return in our department at the interval less than 20 after the first control. Compared with the patients in which the diagnosis was made correctly the misdiagnosed patients in general had lower levels of leukocytes, CRP and temperature. On the first clinical examination these patients showed a lower degree of sensitivity, muscle guarding and abdominal pain. During surgery in four of

osjetljivosti, čuvanje mišića i abdominalna bol. Tokom operacije kod ovih četvoro djece apendix je bio u retrocekalnom položaju, dok je kod jednog djeteta bio pozicioniran između tankog crijeva. Kod tri pacijenta apendix je bio flegmonozan, a kod dva perforiran. **Zaključak:** dijagnoza upala slijepog crijeva kod djece može biti veoma teška zbog atipičnih karakteristika. Prema našem iskustvu kao i podacima iz drugih istraživanja do sada nije postojao test ili kombinacija kliničkih i laboratorijskih ispitivanja sa kojima bi bili u mogućnosti diskriminirati djecu sa i bez akutne upale slijepog crijeva sa visokim visokim stepenom sigurnosti.

Ključne riječi: djeca, apendicitis, pogrešna dijagnoza

these children the appendix was in the retrocecal position whereas in one was positioned between small intestine. In three patients the appendix was phlegmonous and in two was perforated. **Conclusion:** the diagnosis of appendicitis in children can be very difficult because of the atypical features. According to our experience and data from the others studies results that until now does not exist a test or combination of clinical and laboratory examination who will be able with a high percentage of security to discriminate children with and without acute appendicitis.

Key words: children, appendicitis, misdiagnosed

DIJAGNOSTIČKA VRIJEDNOST C- REAKTIVNOG PROTEINA U PACIJENATA SA AKUTNIM ABDOMINALNIM BOLOM

Ferizat Dika - Haxhirexha[1,2], Ledia Kaçi[1], Lutfi Zylbehari[2], Mergime Batusha[1], Kastriot Haxhirexha[2],
[1]PHO "Alba Med", [2]Klinička bolnica Tetovo

C- reaktivni protein (CRP) je najčešće korišteni biomarker posebno na hitnom odjelu pri dijagnostikovanju infektivnih bolesnika. **Materijali i metode:** Retrospektivno smo procijenjivali 150 pacijenata sa akutnim abdominalnim bolom primljenim na odjel hirurgije Kliničke bolnice Tetovo i Javni bolnica "Alba- Med" u periodu od dvije godine od janura 2016.do januara 2017.godine. Svi pacijenti uključeni u ovo istraživanje su bili između 6 i 15 godina starosti. Za potrebe ovog istraživanja pacijenti su bili podijeljeni u dvije grupe- one sa akutnom boli u trbuhu koje zahtijevaju neoperativno liječenje i one sa hirurškim stanjem koje zahtijeva operativni tretman. **Rezultati:** od ukupno 150 pacijenata koji su bili uključe-

THE DIAGNOSTIC VALUE OF C-REACTIVE PROTEIN IN PATIENTS WITH ACUTE ABDOMINAL PAIN

Ferizat Dika - Haxhirexha[1,2], Ledia Kaçi[1], Lutfi Zylbehari[2], Mergime Batusha[1], Kastriot Haxhirexha[2]
PHO "Alba Med"
Clinical Hospital - Tetove

C-reactive protein (CRP) is a commonly used biomarkers especially in emergency department for diagnostics of infectious patients. **Material and methods:** We retrospectively evaluated 150 patients with acute abdominal pain admitted to the surgical department of the Clinical Hospital of Tetove and PHO "Alba – Med" over a period of 2 years respectively from January 20016 - 2017. All patients included in this study was aged between six to 15 years. For the purpose of this study the patients was divided in two group – those with acute abdominal pain requiring non operative management and those with surgical condition requiring operative management. **Results:**

ni u istraživanje 96 su bili ženskog roda a 56 muškog. Svi bolesnici su patili od akutnih abdominalnih bolova, dok je njih 45 imalo hirurško stanje, odnosno kod njih 42 je izvedena apendektomija, kod jednog divertikulektomija i kod jednog ovarijalna pericistektomija. Kod 105 pacijenata ne hirurško stanje je bilo uzrok akutnog abdominalnog bola. U grupi pacijenata sa hirurškim bolestima kod njih 41 (91%) vrijednost CRP-a je bilo viša od > 5g/L, dok je u ne operativnoj grupi nivo CRP-a veći od > 5g/L zabilježen kod 89 pacijenata (84%). Ponovljena mjerenja CRP-a su izvođena kod svih pacijenata sa hirurškim stanjima I kod njih 32 CRP je bio uporno povećan, dok je kod ostalih osam zabilježen pad u vrijednosti CRP-a. **Zaključak:** prema našim iskustvima vrijednost CRP-a nije dovoljna za predviđanje koji pacijenti sa akutnim abdominalnim bolom zahtijevaju irurški tretman.

Ključne riječi: CRP, aktna abdominalna bol, operacija

from the total of 150 patients included in this study 96 were females and 56 males. All the patients suffered from acute abdominal pain, whereas 45 of them had a surgical condition, respectively in 42 of them was performed appendectomy in one diverticulectomy and in another one ovarian pericystectomy. In 105 patients non surgical condition was the reason of acute abdominal pain. In the group of patients with surgical disease in 41 of them (91 %) the value of CRP was more than > 5g/L, whereas in non operative group the level of CRP more than > 5g/L was registered in 89 patients (84%). Repeated measurements of CRP was performed in all patients with surgical condition and in 32 of them CRP was persistently elevated, whereas in eight others was registered a decrease in CRP level. **Conclusions:** according to our experience result that the CRP level is not sufficient to predict which patients with acute abdominal pain require surgical treatment.

Key words: CRP, acute abdominal pain, surgery

DUŽINA PREMENARHALNOG PERIODA KOD DJEVOJČICA SA PODRUČJA OPĆINE ŽIVINICE

[1]Lejla Mešalic, [2]Fejzo Begovic, [3]Amer Osmanovic
[1]Služba zdravstvene zaštite žena i trudnica, Dom zdravlja Tuzla
[2] Srednja škola „Hasan Kikić" Gradačac
[3]Univerzitetski klinički centar Tuzla, Tuzla, Bosna i Herzegovina

Menarhaili prva menstruacija je značajan medicinsko-biološki fenomen gdje djevojčice ulaze u poseban period svoga života, sa kojim počinje njihova spolna zrelost. Menarha obično nastupa u dobi od 9 do 14 godina, a normalnim se smatra razdoblje sve do 16. godine. Menarhanastupa kada su sekundarne spolne

LENGHT OF PREMENARHAL PERIOD OF THE GIRLS FROM THE MUNICIPALITY ZIVINICE

[1]Lejla Mešalic, [2]Fejzo Begovic, [3]Amer Osmanovic
[1]Women and pregnant women health protection service, Health center Tuzla
[2] High School „Hasan Kikic" Gradacac
[3]University Clinical Center Tuzla
Bosnia and Herzegovina

Menarche or first menstruation is a significant medical-biological phenomenon where girls enter a particular period of their life with which their sexual maturity begins. Menarche usually occurs at the age of 9 to 14, and is normally considered to be up to the age of 16. Menarche occurs when secondary sexual

osobine već vidljive i izražene, a određuje je peptidni hormon masnog tkiva leptin, kao i nasljeđe, geografski položaj, socijalni faktori (prehrambeni, podneblje i sl.). Ciljevi ovog istrazivanja su bili utvrditi dužinu premenarhalnog perioda kod djevojčica sa područja općine Živinice, utvrditi uticaj zavičajnog porijekla (selo/grad) na pojavu menarhe, utvrditi uticaj sezonskih varijacija na pojavu menarhe i ispitati korelaciju između menarhe djevojčica i njihovih majki. Ispitanice su bile 404 djevojčice od 11 do 15 godina koja pohađaju osnovnu školu na području općine Živinice. Proces anketiranja obavljen je u navedenim školama tokom aprila i maja 2014. godine tj. krajem školske 2013/2014. godine. Prosječna dužina premenarhalnog perioda kod djevojčica je iznosila 11,98 godina.Ispitanice koje su porijeklom sa sela imale su u prosjeku nešto duži premenarhalni period (M=12,18 godina) od ispitanica koje žive u gradu, gdje je prosječna dužina premenarhalnog perioda iznosila M=11,88 godina.Ispitanice kod kojih se menarha pojavila prvi put u ljetnom periodu, imale u prosjeku neznatno duži premenarhalni period, nego ispitanice kod kojih se menarha pojavila u ostalim godišnjim dobima. Najviše djevojčica, njih 48,6%, imalo menarhu u rasponu tjelesne mase od 51 – 60 kilograma.Srednja vrijednost dužine premenarhalnog perioda kod djevojčica sa područja TK (2007.) je u poređenju sa srednjim vrijednostima Federalnog statističkog zavoda (2002 - 2003.) nešto manja, ali u poređenju sa istim vrijednostima sa područja općine Živinice, opet je značajno veća.Pozitivni sekularni trend pubertetskog sazrijevanja osobito je bio izražen u mediteranskim zemljama, pri čemu se u Italiji prosječna dob menarhe spustila na svega 11,9 godina. Dob menarhe od 13,15 godina u Nizozemskoj se stabilizirao još 1980. godine.Kako se menarha značajno češće javljala u ljetnjim mjesecima, za razliku od zimskih, možemo zaključiti da su temperatura i dužina fotoperioda glavni faktori koji

properties are already visible, expressed and determined by the peptide hormone of fatty tissue leptin, as well as inheritance, geographic position, social factors (dietary, digestive, etc.). The objectives of this study were to determine the length of the premenstrual period for girls from Zivinice, to determine the influence of native origin (village / city) on the occurrence of menarche, to determine the effect of seasonal variations on menarche and to examine the correlation between girls' menus and their mothers. The respondents were 404 girls between the ages of 11 and 15 attending elementary school in Zivinice municipality. The survey process was conducted in these schools during the months of April and May 2014, i.e. at the end of the school year 2013/2014. The average length of the premenstrual period in girls was 11.98 years. Respondents who originated from the village had, on average, a slightly longer premenstrual period (M = 12.18 years) than the respondents living in the city, where the average length of the premenstrual period was M= 11.88 years. Respondents whose menarcheappeared for the first time in the summer period, had, on average, a slightly longer premenarchal period than respondents in whom menarche appeared in other seasons. The majority of girls, 48.6%, had a menarchein a body mass range of 51 to 60 kilograms. The mean value of the premenstrual period in girls in TK (2007) is slightly smaller compared to the mean values of found in the Federal Statistical Office (2002-2003), but in comparison with the same values from the Zivinice municipality it is significantly higher. The positive secular trend of puberty maturity was particularly pronounced in Mediterranean countries, while in Italy the average age of menarches was only 11.9 years. In the Netherlands, the menarcheage of 13.15 years has stabilized in the 1980s. As menarcheappears to be more frequent in the summer months, unlike winter, we can conclude that the temperature and length of

određuju sezonski ritam pojave menarhe. Slične podatke dobili su i drugi autori.Menarha se najčešće javljala u ljetnim mjesecima, a razlog ovomemože se smatrati temperatura i dužina fotoperioda, prestanak školskih aktivnosti, tj uticaj psihosocijanog stresa.

photoperiod are the main factors determining the seasonal rhythm of the menarche. Similar information was received by other authors. The menarchemost commonly appeared in the summer months, and this may be the temperature and length of the photoperiod, the cessation of school activities and the influence of psychosocial stress.

STIMULACIJA NERVUS VAGUSA U TRETMANU REFRAKTARNIH EPILEPTIČKIH NAPADA

Amela Numanović
Klinika za dječije bolesti, Univerzitetsko klinički centar Tuzla, Bosna i Hercegovina

Epilepsija je hronična bolest mozga koju karakterišu paroksizmi epileptičkih napada različitog trajanja, intenziteta i prognoze. U dječijoj dobi epilepsija je česta neurološka bolest koja se u oko 60 posto slučajeva dobro kontroliše i liječi monoterapijom ili politerapijom antiepilepticima, a kod 40 % pacijenata postoje refraktarni napadi koji su rezistentni na medikamentoznu terapiju što znatno remeti kvalitet života djeteta. U skladu sa najnovijim svjetskim smjernicama posljednjih godina posvećuje se sve više pažnje neurohirurškom liječenju pacijenata s farmakorezistentnom epilepsijom a kod kojih nije moguće klasično resektivno neurohirurško liječenje (operativno odstranjivanje određenih patološki promijenjenih regija mozga). Ugradnja vagusnog nervnog stimulatora vrši se u cilju da se prorijede, smanje i po mogučnosti nestanu epileptički napadi kod pacijenata. Primjena ove metode rezultat je dugogodišnjeg istraživanja u oblasti neurostimulacija. U svijetu je u upotrebi od 1997 godine. Implantaciju stimulatora nervus vagusa (VNS) provodi neurohirurg, a indikaciju za ugradnju VNS postavlja tim koji čine neurolog-epileptolog, neurohirurg i neuroradiolog. Kandidati za ugradnju vagusnog stimulatora

STIMULATION OF NERVUS VAGUS IN THE TREATMENT OF REFRACTORY EPILEPTIC SEIZURES

Amela Numanovic
Clinic of Children's Diseases, University Clinical Center of Tuzla, Bosnia and Herzegovina

Epilepsy is a chronic disease of the brain that is characterized by paroxysms of epileptic seizures of varying duration, intensity and prognosis. In children, epilepsy is a common neurological disease that is well controlled and treated in about 60% of cases by monotherapy or polytherapy with antiepileptics, and in 40% of patients there are refractory seizures that are resistant to medication therapy that significantly disturb the quality of life of a child. In line with the latest world guidelines in recent years, attention has been paid to the neurohospital treatment of patients with pharmacodynamic epilepsy and where classical resective neurohirurgic treatment is not possible (operational removal of certain pathologically changed brain regions). The installation of a vaginal nerve stimulator is performed in order to prolong, reduce and possibly disappear epileptic seizures in patients. The application of this method is the result of long-term research in the field of neurostimulation. The world has been in use since 1997. Vaginal Nerve Stimulator Implantation (VNS) is performed by a neurosurgeon, and the VNS signal is set up by a team consisting of a neurologist epilep-

su bolesnici koji boluju od parcijalne epilepsije ili primarno generalizirane epilepsije, a koji su farmakorezistentni, te kod kojih ne postoji odgovarajući supstrat za klasično resektivno liječenje. Stimulacijom tog nerva djeluje se na određena područja mozga za koja se zna da imaju epileptogenu aktivnost. Ugradnjom vagusnog stimulatora smanjuje se broj napada za oko 40-50%, ali istovremeno se ne smanjuje niti ukida medikamentozna antiepileptička terapija u određenom vremenskom periodu. Cilj implantacije vagusnog stimulatora je smanjiti broj epileptičkih napada i poboljšati kvalitetu života pacijenata. Cilj rada je kroz prikaz slučaja dva pacijenta kod kojih je ugrađen vagus stimulator a koji se liječe u klinici za dječije bolesti Tuzla prezentirati naša iskustva.

Ključne riječi: refraktarne epilepsije, stimulacija nervus vagusa

tologist, a neurohirurgist and a neuroradiologist. Applicants for the installation of vaginal stimulation are patients suffering from partial epilepsy or primary generalized epilepsy, who are pharmacoresistant and lacking the appropriate substrate for classically resective treatment. Stimulation of this nerve affects certain areas of the brain that are known to have epileptogenic activity. By incorporating a vaginal stimulant, the number of attacks is reduced by about 40-50%, but at the same time, no diminished or abolished medicamentous antiepileptic therapy over a given period of time. The goal of vaginal stimulation implantation is to reduce the number of epileptic seizures and improve the quality of life of patients. The aim of the paper is to present our experiences through two patients who have a vagus stimulator and who are being treated at the Tuzla Children's Clinic.

Keywords: refractory epilepsy, stimulation of vagus nerve

RECIDIVIRAJUĆA ABDOMINALNA BOL I INFEKCIJU HELICOBACTER PLYORI U KORELACIJI SA NALAZOM EZOFAGOGASTRODUODENOSKOPIJE U DJECE

Lejla Osmančević, Selma Selimović
JZU UKC, Klinika za dječije bolesti,
Bosna i Hercegovina

Cilj rada je bio utvrditi udruženost recidivirajuće abdominalne boli i infekcije Helicobacter pylori u djece u korelaciji sa ezofagogastroduodenoskopijom (EGD). **Uvod:** Recidivirajuća abdominalna bol (RAB) se definiše prema opšte usvojenim kriterijima Apleya i Naisha pojavom tri ili više napada abdominalne boli koji traju duže od tri mjeseca, u djece starije od tri godine, dovoljno teških da onemoguće

RECURRENT ABDOMINAL PAIN AND INFECTIONS HELICOBACTER PLYORI IN CORRELATION WITH ESOPHAGOGASTRODUODENOSOPHY IN CHILDREN

Lejla Osmančević, Selma Selimović
Clinic for Children's Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Aim: The aim of this study was to determine the association of recurrent abdominal pain and Helicobacter pylori infection in children in correlation with esophagogastroduodenoscopy (EGD). **Introduction:** Recurrent Abdominal Pain (RAB) is defined according to generally accepted criteria of Apleya and Naisha by the onset of three or more abdominal pain attacks lasting more than three months in

normalnu aktivnost djeteta. Udruženost RAB i infekcije Helicobacter pylori analizirana je u više različitih studija i postoje oprečni rezultati o njihovoj međusobnoj povezanosti. **Metodologija:** U studijski protokol bilo je uključeno ukupno 77 djece podijeljene u odnosu na dob u tri podgrupe: predškolska dob (od 3 do 6,9 godina), školska (od 7 do 10,9 godina) i adolescentna dob (od 11 do 15 godina) kod koje je dijagnoza RAB postavljena ispunjavanjem kriterija prema Apley i Naisha i Američke Akademije za Pedijatriju. Potvrda infekcije Helicobacter pylori se radila imunološkom metodom imunoenzim testom ELISA, dok je EGD izvođena u endoskopskom kabinetu Klinike za interne bolesti UKC Tuzla na aparatu za gornju endoskopiju tipa Olimpus GIF Q156. **Rezultati:** Od ukupnog broja ispitivane djece (77) analizom prisustva Helicobacter pylori infekcije, najviše pozitivnih nalaza je zabilježeno u školskoj dobi 91,3%, u adolescentnoj 78,0%, dok je predškolskoj dobi bio najmanji broj (25,0%). Najčešći nalazi gornje endoskopije bili su antritis acuta (16%), gastritis chronica activa erosiva (32%), i duodenitis chronica (12%). **Zaključak:** Značajna povezanost između infekcije Helicobacter pylori i RAB potvrđene pozitivnim nalazom EGD, upućuju na zaključak da je opravdano imunološko testiranje na prisustvo ove bakterije. Nakon dobivenog pozitivnog nalaza i potvrđene infekcije neophodno je započeti liječenje.

Ključne riječi: recidivirajuća abdominalna bol, Helicobacter pylori, ezofagogastroduodenoskopija

children older than three years, which are difficult enough to disrupt the normal activity of the child. The association of RAB and the Helicobacter pylori infection has been analyzed in several different studies, and there are contradictory results on their interconnectedness. **Methodology:** A total of 77 children were divided into the study protocol in relation to age in three subgroups: pre-school age (from 3 to 6.9 years), school (from 7 to 10.9 years) and adolescence (ages 11 to 15) where the diagnosis of RAB was set by meeting the criteria for Apley and Naisha and the American Academy of Pediatrics. Confirmation of Helicobacter pylori infection was performed using an immunological ELISA immunoassay test, while EGD was performed in the endoscopic cabinet of the UKC Tuzla Internal Medicine Clinic on the upper endoscopy apparatus of the Olimpus GIF Q156. **Results:** Of the total number of children surveyed (77), analyzing the presence of Helicobacter pylori infection, the most positive findings were recorded in the school age of 91.3%, in the adolescent 78.0%, while the pre-school age was the smallest number (25.0%). The most common findings of the upper endoscopy were acute antritis (16%), gastritis chronica activa et erosiva (32%) and duodenitis chronica (12%). **Conclusion:** Significant association between Helicobacter pylori and RAB confirmed by a positive finding of EGD, suggest that the immunological testing for the presens of this bactererium is justified. After obtaining a positive finding and confirmed infection, it is necessary to begin treatment.

Key words: recurrent abdominal pain, Helicobacter pylori, esophagogastroduodenoscopy

PROCJENA CIJANOZE NOVOROĐENČETA U JEDINICI INTENZIVNOG LIJEČENJA: PROBLEMI LIJEČENJA I HITNOG IZMIJEŠTANJA

Dženana Ostrvica[1] Edin Ostrvica[2] Fejzo Džafić[1] Amina Saračević[3]
[1] JZU UKC Tuzla, Klinika za dječije bolesti
[1] JZU UKC Tuzla, Poliklinika za laboratorijsku dijagnostiku
[2] JZU Dom zdravlja "Dr Mustafa Šehović" Tuzla Služba za zaštitu žena i trudnica
[3] Opća bolnica Tešanj Odjeljenje pedijatrije

Uvod: Cijanozom označavamo plavu preboje nost kože i sluznica zbog povećane koncentracije dezoksihemoglobina. Razlikovanje cijanoze uzrokovane respiracijskim problemima od cijanoze srčane etiologije čest je problem u jedinicama neonatalnog intenzivnog liječenja.**Cilj:** Važnost ranog razlučivanja plućnog od srčanog uzroka cijanoze te procjena hitnosti daljih postupaka liječenja. **Metode:** Retrospektivnom analizom su obuhvaćena novorođenčad liječena u intenzivnoj njezi UKC Tuzla, u periodu između 01.12. 2013. i 01.12.2017.godine. U procjeni cijanoze korišteni su prametri saturacije puls oksimetrijom, vrijednosti parcijalnih pritisaka kisika i ugljičnog dioksida iz uzoraka periferne krvi, rentgenološka i ultrazvučna dijagnostika. **Rezultati:** Tokom navedenog perioda u odjeljenju intenzivne terapije je liječeno ukupno1022 novorođenče. Zbog respiratorne disfunkcije cijanozu je manifestovalo u prvim satima života 480 (46,9%) novorođenče. Zbog urođene bolesti srca cijanotično je bilo njih 20 (1,95%) , a 522 (51,07%) novorođenče liječeno u navedenom periodu nije bilo cijanotično. Kod cijanotične novorođenčadi zbog postojanja UAS, do početka 2016 godine novorođenčad su izmještana u referentni kardiohirurški centar KCU Sarajevo na liječenje nakon tog perioda imamo problem hitnog izmještanja i liječenja. **Zaključak:** Iako je broj djece sa srčanim ma-

ASSESSEMENT OF NEWBORN CYANOSIS IN THE INTENSIVE CARE UNIT: PROBLEMS OF TREATMENT AND EMERGENCY TRANSPORT

Dženana Ostrvica[1] Edin Ostrvica[2] Fejzo Džafić[1] Amina Saračević[3]
[1]Clinic for Children's Diseases, University Clinical Center Tuzla
[1]Polyclinic for Laboratory Diagnostics, University Clinical Center Tuzla
[2]Public Health Institute Health Center "Dr Mustafa Šehović" Tuzla Service for the Protection of Women and Pregnant Women
[3] General Hospital Tešanj, Pediatric Department

Introduction: Cyanosis is characterized by blue skin and mucous membranes due to increased levels of deoxyhemoglobin. The distinction of cyanosis caused by respiratory problems of cyanosis of cardiac etiology is a common issue in neonatal intensive care units. **Objective:** The importance of early pulmonary resolution of the heart cyanosis cause and the assessment of the urgency of further treatment. **Methods:** Retrospective analysis included newborns treated in intensive care UKC Tuzla, in the period between 01.12. 2013 and 01/12/2017. The cyanosis estimation used the pulse oximetry pulses, the values of partial oxygen and carbon dioxide pressure from peripheral blood samples, X-ray and ultrasound diagnostics. **Results:** During this period, a total of 1022 newborns were treated in the intensive care unit. Due to respiratory dysfunction, cyanosis was found in the first hours of life (46.9%) of the newborn. Because of congenital heart disease, cyanotic was 20 (1.95%), and 522 (51.07%) of the infant treated in the mentioned period was not cyanotic. In the case of cyanotic infants due to the existence of UAS, by the beginning of 2016, newborns were moved to the reference cardio-surgical center of KCU Sarajevo for treatment after this period, we have a problem of emergency relocation and treatment. **Conclu-**

nama mali u ukupnom udjelu cijanotične novorođenčadi 1,95% ipak je vrlo važno rano izdvojiti ove pacijente zbog hitnosti uključenja konzervativne terapije i potrebe daljeg hirurškog liječenja.

Ključne riječi: cijanoza, respiratorni problemi, urođene anomalije srca,transport

sion: Although the number of children with heart defects is small in the total proportion of cyanotic infants 1.95%, it is very important early to isolate these patients due to the urgency of incorporating conservative therapy and the need for further surgical treatment.

Key words: cyanosis, respiratory problems, congenital anomalies of the heart, transport

PRIRODNI TIJEK CEREBRALNE PARALIZE

Andrea Polovina
Poliklinika "Prof.dr.sc. Milena Stojčević Polovina"
Zagreb, Hrvatska

Iako je cerebralna paraliza neizliječivo stanje, ona nije nepromijenjiva. Rehabilitacijski stručnjaci na promjene koje se javljaju u djece s cerebralnom paralizom često gledaju kao na promjene nastale djelovanjem rehabilitacijskih postupaka, ne smije se zaboraviti da cerebralna paraliza ima svoj razvoj nevezano za terapijske postupke koji se provode. Govorimo o prirodnom tijeku cerebralne paralize. Prirodni tijek cerebralne paralize se opisuje koristeći starost djeteta, Gross Motor Function Measure (GMFM), mjeru funkcije u djece s cerebralnom paralizom i Gross Motor Function Classification System (GMFCS), klasifikacijskog sistema koji u pet stupnjeva opisuje grubu motoričku funkciju djece i mladih s cerebralnom paralizom na osnovi njihovog samoiniciranog kretanja, s posebnim naglaskom na sjedenje, hodanje i kretanje uz pomagala. Prikazom odnosa GMFM-a i dobi djeteta u odnosu na GMFCS stupanj, možemo dobiti uvid u prirodni tijek cerebralne paralize. Nastale krivulje motornog razvoja pomažu doktorima, terapeutima i obiteljima da lakše razumiju promjene u motorici koje se događaju s vremenom i stupanj samostalnosti koji je za očekivati da će se postići. Poseban značaj ima stabilnost GMFCS-a. U literaturi se navodi da dijete klasificirano u jedan od GMFCS stup-

NATURAL COURSE OF CEREBRAL PALSY

Andrea Polovina
Polyclinic "Prof.dr.sc. Milena Stojčević Polovina"
Zagreb, Croatia

Although cerebral palsy is an incurable condition, it is not unchangeable. Rehabilitation experts often look on changes that occur in children with cerebral palsy as changes caused by the rehabilitation procedures. However, it must not be forgotten that cerebral palsy has its development unrelated to the therapeutic procedures being carried out. We are talking about the natural course of cerebral palsy. The natural course of cerebral palsy is described using the age of the child, the Gross Motor Function Measure (GMFM), the measure of function in children with cerebral palsy and the Gross Motor Function Classification System (GMFCS), a classification system that describes in five stages the gross motor function of children and young people with cerebral palsy accorded their self-initiated movement, with a special emphasis on sitting, walking and moving alongside the aids. By showing the relationship between GMFM and the age of a child relative to GMFCS, we can get an insight into the natural course of cerebral palsy. The resulting motor development curves help doctors, therapists and families understand the changes in motor function that occur over time and the degree of autonomy that is to be expected to be achieved. The stability of GMFCS is of particular importance. In the lit-

njeva će vrlo vjerojatno u njemu ostati stalno bez obzira na terapijske intervencije. Stoga, da bi se promjena vidljiva u funkciji djeteta sa sigurnošću mogla smatrati posljedicom provedenih rehabilitacijskih postupaka, nužno je da promjena bude veća od očekivane u odnosu na prirodni tijek bolesti, a to je najlakše dokazivo s poboljšanjem GMFCS stupnja djeteta.

erature it is stated that a child classified in one of the GMFCS degrees will very likely remain in it regardless of the therapeutic intervention. Therefore, in order for a change visible in the child's function to be considered as a consequence of rehabilitation procedures, it is necessary that the change be greater than expected in relation to the natural course of the disease, and this is most easily demonstrated by the improvement of the GMFCS grade of the child.

SPONTANA MOTORIKA PREMA PRECHTLU – MOGUĆNOST RANE DIJAGNOZE CEREBRALNE PARALIZE

Svetislav Polovina
Poliklinika „Prof.dr.sc. Milena Stojčević Polovina“, Zagreb, Hrvatska

Spontano generirana pokretljivost, kao najčešći i najkompleksniji uzorak pokreta spontane motorike, prisutna je već od 9. tjedna intrauterinog života i može se ocjenjivati i u prijevremeno rođene i u donošene djece, već od trenutka rođenja. Usprkos malim razlikama, ovisnim o dobi, spontano generirani pokreti su vrlo slični od ranog fetalnog doba do kraja drugog mjeseca poslije termina. Prema vremenu nastajanja ih dijelimo na fetalne ili prijevremene (prije termina rođenja), pokrete uvijanja (od termina do 6-9 tjedna života) te pokrete vrpoljenja (od 6-9 tjedna do 6. mjeseca života). Nakon 6 mjeseca pokreti vrpoljenja se zamjenjuju sve više s voljnim i antigravitacijskim pokretima. Brojni dokazi upućuju na činjenicu da je ritmička spontana pokretljivost endogeno generirana preko tzv. centralnih automatizama, koji se smatraju odgovornima za generiranje određenih neuralnih mehanizama, jer su njihovi motorički obrasci konstantni u formi i radi toga jako prepoznatljivi . Postoji niz studija koje povezuju određene tipove

SPONTANEOUS GENERAL MOVEMENTS ACCORDING TO PRECHTL - POSSIBILITY OF EARLY DIAGNOSIS OF CEREBRAL PALSY

Svetislav Polovina
Polyclinic „Prof.dr.sc.Milena Stojčević Polovina“, Zagreb, Croatia

General movements, as the most common and complex pattern of spontaneous motor motion, are present from the 9th week of intrauterine life and can be evaluated in premature and term children, even from the moment of birth. Despite age-related differences, spontaneously generated movements are very similar, from early fetal period to the end of the second month after the term. According to the time of birth, they ar called fetal or premature (before the birth term), writhing movements (from the term up to 6-9 weeks of life) and fidgety movements (from 6-9 weeks to 6 months of life). After 6 months of gestation, fidgety movements are increasingly replaced by volitional and antigravitational movements. Numerous evidence suggests that rhythmic spontaneous mobility is endogenously generated through so called central automatism, which are considered responsible for generating certain neural mechanisms, because their motor patterns are constant in shape

abnormalnosti spontano generirane pokretljivosti i cerebralne paralize, te se smatra da se primjenom Precthlove metode ocjenjivanja spontano generirane pokretljivosti u novorođenčadi mogu s viskom stupnjem sigurnosti utvrditi djeca u koje će se razviti cerebralna paraliza.

and therefore highly recognizable. There are a number of studies that associate certain types of abnormalities of spontaneously generated movements and cerebral palsy, and it is considered that using Precthl's method of assessment of general movments in infants can determine with the high level of certainty the children who will develop cerebral palsy later in life.

POVEZANOST NEUROLOŠKOG I EMOCIONALNOG RAZVOJA DOJENČADI

Biserka Rešić[1],Edina Karabeg[2] , Ivana Jelovina[3], Jasminka Rešić[3]
1Medicinski Fakultet Sveučilišta U Splitu, Split, Hrvatska
[2]Opća Bolnica Sanski Most, Sanski Most, Bosna i Hercegovina
[3] Kliničko Bolnički Centar, Klinika za ginekologiju i obstetriciju, Split, Hrvatska

Strukturalna maturacija mozga u dojenačkoj dobi u osnovi predstavlja ontogenetski razvoj vi šestrukih autoregulacijskih funkcionalnih sustava. Razvoj emocija moguće je razumjeti jedino u kontekstu integracije neurobioloških i strukturalnih promjena mozga. Postnatalni period je vrijeme brzog i značajnog rasta mozga u kojem se razvijaju osnove neurorazvojnih kapaciteta koji čine podlogu za kasniju psihološku i emocionalnu strukturu ličnosti. Tijekom kritičnog razdoblja ranog sazrijevanja mozak je iznimno osjetljiv na podražaje iz okoline koji mogu utjecati na njegov strukturalni i neurokemijski razvoj. Interakcija dojenčeta s majkom, kao i neki traumatski događaji s druge strane, izazivaju niz kaskadnih neurokemijskih i neurobioloških procesa zaduženih za rast i diferencijaciju kortolimbičkih struktura odgovornih za samoregulaciju. Takvi utjecaji oblikuju neurološki, psihološki i socijalni razvoj što ima enormne posljedice koje se oči-

CONNECTION BETWEEN NEUROLOGICAL AND EMOTIONAL DEVELOPMENT OF INFANTS

Biserka Rešić[1], Edina Karabeg2, Ivana Jelovina[3], Jasminka Rešić[3]
[1]Medical faculty, University of Split, Split, Croatia
[2]General Hospital Sanski Most, Sanski Most, Bosnia and Herzegovina
[3]Clinical Hospital Center, Clinic for Gynecology and Obstetrics, Split, Croatia

The structural maturation of the brain in the infant state, basically represents ontogenetic development of multiple autoregulation functional systems. Development of emotions is understandable only in context of integration of neurobiological and structural changes of brain. Postnatal period is the time of fast and important brain growing, in which neurodeveloping capacity basis is being built, which makes the base for later psychological and emotional structure of personality. During the critical period of early maturation, the brain is intensely sensitive to external stimulations, since these can influence its structural and neurochemical development. Interaction between infant and the mother, but as well some traumatic events from other source, cause the series of cascade neurochemical and neurobiological processes that are in charge for growing and differentiation of cortolimbic structures responsible for self-regulation. Such

tuju cijeloga života. Kritično razdoblje sazrijevanja mozga je doba povećane vulnerabilnosti, a ujedno i mogućnosti oporavka, odnosno plasticiteta mozga djelovanjem vanjskih čimbenika. Navedene činjenice našle su primjenu u kliničkoj praksi uvođenjem rane intervencije kod emocionalnih poremećaja. Ovaj rad daje pregled normalnog razvitka moždanih struktura koje su odgovorne za emocionalnost i privrženost, posljedice pozitivnih i negativnih utjecaja iz okoline koji moduliraju te procese te načine na koje se negativni procesi mogu zaustaviti i popraviti.

Ključne riječi: neurološki razvoj, emocija, privrženost,razvoj mozga, strukturalne promjene, plasticitet, prevencija.

influences shaping the neurological, psychological and social development have significant consequences which manifesting through whole life. Critical period of brain development is the period of increased vulnerability, but in the same time the possibility for recovery, and the increased brain plasticity under the influence of the external factors. These facts have found the use in the clinical praxis through introduction of the earlier intervention in case of emotional disorders. This work provides an overview of the normal development of brain structures responsible for emotions and adherence, the effects of positive and negative external impacts that modulate these processes and the ways in which negative processes can be stopped and corrected.

Key words: neurological development, emotion, adherence, brain development, structural changes, plasticity, prevention

PROCJENA RANOG RASTA I RAZVOJA KOD DOJENČADI OD 9 DO 12 MJESECI

Amela Rovčanin[1], Adnan Bajraktarević[1], Belma Krdžalić[1], Lejla Kumašin[1], SabinaKurtagić[1], Fuad Husić Fuad[1], Đana Tirić Firdus[1], Saša Mandić[1], Aldijana Lozančić Ruhotina[1], Mubera Hasanović[1], Lutvo Sporišević[1], Branka Djukić[2], Smail Zubčević[3], Aida Đurđević Đulepa[4], Jasmina Šlaku[4], Goran Todosijević[5]

[1]Javna Ustanova Dom zdravlja kantona Sarajevopredškolski odjel,
[2]Hitna pomoć kantona Sarajevo-Novo Sarajevo pedijatrijsko odjeljenje,
[3]Pedijatrijska Klinika Sarajevo-Neurološki odjel,
[4]Opća bolnica Sarajevo-Neonatološki odjel,
[5]Klinički Centar Sarajevo- Fizijatrijski odjel

Uvod: Procjena ranog rasta i razvoja (RRR) vrlo je bitna u dojenačkoj i novorođenačkoj dobi. **Cilj rada:** Ukazivanje na poseban zna-

ASSESSMENT OF EARLY GROWTH AND DEVELOPMENT IN CHILDREN FROM NINE TO TWELVE MONTHS

Amela Rovčanin[1], Adnan Bajraktarević[1], Belma Krdžalić[1], Lejla Kumašin[1], Sabina Kurtagić[1], Fuad Husić Fuad[1], Đana Tirić Firdu[s1], Saša Mandić[1], Aldijana Lozančić Ruhotina[1], Mubera Hasanović[1], Lutvo Sporišević[1], Branka Djukić[2], Smail Zubčević[3], Aida Đurđević Đulepa[4], Jasmina Šlaku[4], Goran Todosijević[5]

[1]Public Health Institute Health Center of Sarajevo Canton , Department for Pre-school children
[2]Emergency Sarajevo Canton, Novo Sarajevo, Pediatric Department
[3]Pediatric Clinic Sarajevo- Neurology department,
[4]General Hospital Sarajevo-Neonatology department,
[5]Clinical Center Sarajevo-Physiatric department

čaj pravilne pedijatrijske procjene ranog rasta i razvoja do kraja prve godine života u primarnoj zdravstvenoj zaštiti. **Metode rada:** Koristile su se razvojne bihevioralne skale RBS u dobi od 9-12 mjeseci i to u periodu dva mjeseca za septembar i decembar 2017 za djecu između devet do 12 mjeseci. Koristila se RBS skala s pet oblasti i ukupno 33 stavki s maksimalnim skorom od 66 poena (prvi dio govor-komunikacije s maksimalnim skorom od 18 bodova, drugi dio razvoj motorike s 24 poena, treći dio kognitivni razvoj s 14 maksimalno, četvrti dio socio-ekonomski razvoj s 4 boda i peti samopomoć-briga o sebi s maksimalnim skorom od samo 6). **Rezultati:** Od stotinu djece rođene u Sarajevu kako u septembru tako i decembru u dobi 9-12 mjeseci od toga u svakom mjesecu ispitivanja po 50 i muškog ili ženskog pola i odstupanje ukupno za septembar je za tri (3%) djece težeg oblika i četiri (4%) lakšeg, a za decembar dva (2%) težeg oblika i sedam (7%). Nije bilo signifikantnog odstupanja u odnosu na pol djeteta (Student t-test). **Zaključak:** Rano otkrivanje odstupanja i procjena razvoja djeteta je danas ultimatum preventivne pedijatrije u primarnoj praksi. Korištenje razvojne bihevioralne skale (RBS) kao četvrti element procjene po rasporedu na osnovu dobi ima vrlo značajno mjesto u daljoj dijagnostici i procjenu ranog razvoja dojenčadi do navršene prve godine života i tretmana na neuropedijatriji.

Ključne riječi: Dojenčad, RRR (rani rast i razvoj), RBS (razvojne bihevioralne skale), Procjena.

Abstract Introduction: Evaluation of Early Growth and Development (EGD) is very important in the age of a young child and pre-school age. Objective: To emphasize the importance of correct pediatric assessment of early growth and development between the ninth and twelth months of life for children in primary health care. **Methods:** Developmental behavioral scales (DBS) ranging from 9 to 12 months years were used in the period of two months for September and December 2017 for children between 9 and 12 months of age. The DBS scale with five areas and a total of 33 criteria with a maximum score of 66 points was used (the first part of speech-communication with a maximum score of 18 points, the second part of the motor development of 24-point, the third part cognitive development with 14 maximum, socio-economic development with 4 points and fifth self-help self-care with a maximum score of 6 points). **Results:** The estimation of assessment for one hundred of children born in Sarajevo, which was made in September and other 100 December at the age of 9 to 12 months by fifty in each month. The results of the male or female sex deviation total for September is for three (3%) children with a more severe form and four (4%) easier, and for December two children (2%) are more severe and seven (7%). There are not significant deviation in relation to the sex of a children. (Student t-test) **Conclusion:** Early detection of deviation and assessment of child development is today the ultimatum of preventive pediatrics in primary practice. The use of the developmental behavioral scale (DBS) as the fourth element of age-based assessment is very important in diagnosis and evaluation of the early development of children aged from nine to twelve months of age and treatment on neuropediatric ward.

Key words: Children, EGD (Early Growth and Development), DBS (Developmental Behavioral Scales), Assessment.

PLUĆNA HEMORAGIJA KOD VENTILIRANIH PREMATURUSA SA RESPIRATORNIM DISTRES SINDROMOM

Sabina Terzić, Suada Heljić
Pedijatrijska klinika,
Klinički Centar Univerziteta u Sarajevu

Uvod: Respiratorni distres sindrom (RDS) je najčešće tretirano oboljenje u jedinicama neonatalne intenzivne njege. Plućna hemoragija je jedna od komplikacija RDS-a koja zbog visokog uticaja na morbiditet i mortalitet predstavlja najveći izazov. **Cilj:** Cilj ovog rada je utvrditi incidenciju plućne hemorgije kod ventilirane nedonoščadi sa RDS-om, kao i uticaj ventilatorne strategije na poboljšanje ishoda ove djece. **Metode:** Ova studija je obuhvatila 158 nedonoščadi sa RDS-om gestacijske dobi od 23 do 35 nedjelja, koja su tretirana prema principima Evropskog vodiča za tretman RDS-a. U odnosu na dominantne vrijednosti pCO2 formirane su dvije grupe : 1) grupa ventilirana pretežno normokapnijom i 2) grupa ventilirana startegijom permisivne hiprkapnije. Za utvrđivanje incidencije plućne hemoragije te komparaciju ishoda u odnosu na ventilatornu strategiju korišne su sljedeće statističke metode: Chi kvadrat test, test distribucije (Kolmogorov-Smirnov test), te analiza kontinuiranih varijabli Mann-Whitney testom. Statističke analize realizirane su sa nivoom signifikantnosti od 5%. **Rezultati:** Incidenca plućne hemoragije u ispitivanoj grupi bila je 11/158 ili 6,96%, sa visokom stopom mortaliteta (72,7%), pri čemu je vjerovatnoća za letalan ishod 2,89 puta veća u odnosu na djecu bez hemoragije (RR=2.89, 95% CI=1.83-4.56, z=4.55, P<0.0001). Nije nađena razlika u pojavi plućne hemoragije (P=0.35) među ispitivanim grupama, što znači da strategija permisivne hiperkapnije nosi jednak rizik za nastanak plućne hemoragije kao i normokapnija. Nađena je statistički značajna korelacija između plućne hemoragije i broja dana na mehaničkoj ventilaciji (P=0.0005) u ukupnom uzorku i

PULMONARY HEMORRHAGE IN VENTILATED PRETERM INFANTS WITH RESPIRATORY DISTRESS SYNDROME

Sabina Terzić, Suada Heljić
Pediatric Clinic, University Clinical Center
Sarajevo, Sarajevo, Bosnia and Herzegovina

Introduction: Respiratory distress syndrome (RDS) is the most commonly treated disease in neonatal intensive care units worldwide. Pulmonary hemorrhage in one of the complications of RDS with high mortality rates. **Aim:** The aim of this paper is to determine incidence of pulmonary hemorrhage in ventilated preterm infants with RDS and impact of permissive hypercapnia as a ventilatory strategy on outcome of these patients. **Methods:** This is a study on 158 infants with RDS, whose gestational age is 23 to 35 gestational weeks, who were treated according to European Consensus Guidelines on the Management of Respiratory Distress Syndrome. Two groups of patients were formed based on dominant PCO2 values: 1) normocapnia group 2) hypercapnia group. In order to determine incidence of pulmonary hemorrhage and to compare outcomes in different groups we used statistical methods: Chi square test, test of distribution (Kolmogorov-Smirnov), analyzes of continuous variables Mann-Whitney test. Statistical analyzes were conducted with significance level of 5%. **Results:** Incidence of pulmonary hemorrhage in our patients was 11/158 (6.96%), with high mortality (72.7%). Probability for lethal outcome was 2.89 times higher comparing with patients without pulmonary bleeding. (RR=2.89, 95% CI=1.83-4.56, z=4.55, P<0.0001). We didn't find difference in pulmonary bleeding occurrence (P=0.35) between groups which means that strategy of permissive hypercapnia carries the same risk for pulmonary bleeding as normocapnia. We found statistically significant correlation between pulmonary hemorrhage and days on mechanical ventilation (P=0.0005) in

podgupi nomokapnije, dok u grupi permisivna hiperkapnija to nije slučaj (P=0.2127). **Zaključci:** Incidenca plućne hemoragije kod nedonoščadi sa RDSom je oko 7%, sa izuzetno visokim mortalitetom. Ventilatorna streategija permisivne hiperkapnije nije protektivna u odnosu na učestalost plućne hemoragije, ali može skratiti vrijeme trajanja mehaničke ventilacije.

Ključne riječi: nedonošče, respiratorni distres sindrom, plućna hemoragija

all patients as well as in normocapnia group, while not in hypercapnia group (P=0.2127). **Conclusions:** The incidence of pulmonary hemorrhage in preterm infants with RDS is around 7%, with extremely high mortality. Ventilatory strategy of permissive hypercapnia is not protective in relation to the incidence of pulmonary hemorrhage, but may shorten the duration of mechanical ventilation.

Key words: preterm infant, respiratory distress syndrome, pulmonary hemorrhage

SUPORTIVNA TERAPIJA DERIVATIMA KRVI KOD DJECE OBOLJELE OD AKUTNE LEUKEMIJE

Meliha Sakić, Nedim Begić
Pedijatrijska klinika KCU Sarajevo,
Bosna i Hercegovina

Uvod: Akutna leukemija je brzo progresivna bolest u kojoj dolazi do zamjene normalne koštane srži zloćudnim stanicama koje nastaju malignom transformacijom matičnih stanica. Zbog ove promjene smanjene su vrijednosti trombocita i eritrocita i u koštanoj srži i u perifernoj krvi, a što se odražava i na kliničku sliku. **Cilj rada:** Cilj rada je analiziranje primjene suportivne terapije derivatima krvi kod djece oboljele od akutne limfoblastne leukemije. **Metode rada:** Rezultati su dobiveni analizom 32 istorije bolesti djece uzrasta od 0 do 6 godina, a koja su liječena na Hematoonkološkom odjelu Pedijatrijske klinike KCU u Sarajevu. **Rezultati:** U analiziranoj grupi; dječaci KG „0“ RH (D) su više obolijevali, dok je kod oboljelih djevojčica bila zastupljena više KG“A“ Rh(D) poz. U okviru suportivne terapije najčešća je bila primjena deplazmatisanih eritrocita (DE) u drugoj fazi indukcije i to kod dječaka je primjenjena 21 doza DE,

SUPPORTIVE THERAPY WITH BLOOD DERIVATES IN CHILDREN SUFFERING FROM ACUTE LEUKAEMIA

Meliha Sakić, Nedim Begić
Pediatric Clinic, University Clinical Center
Sarajevo, Sarajevo, Bosnia and Herzegovina

The aim: to analyze the application of supportive therapy with blood derivates in children suffering from acute lymphoblastic leukaemia. **Methods:** the results are obtained by analyzing 32 medical records of children aged from 0 up to 6 years old, who are treated at Hematooncology Department, Pediatric Clinic, University Clinical Center of Sarajevo. **Results:** In analyzed group, boys with blood group “O” RhD were more often ill, while bood group “A” RhD+ was more represented in a group of ill girls. Within supportive therapy the most common administration of depleted erythrocite (DE) was in the second phase of inductions ; 21 doses of DE were administered in boys and 18 doses were administered in girs. The average value of hemoglobin (HB) in boys was 69.9, in girls 71.1.

Platelet concetrates were admistered at the begining of treatment. According to body weight, 20 doses were administered in boys

a kod djevojčica je primjenjeno 18 doza. Prosječna vrijednost Hemoglobina (HB) kod dječaka je bila 69,9 , akod djevojčica je bila 71,1. Derivati koncentrovanih trombocita (KT) su bili primijenjeni na početku liječenja. Kod dječaka je primijenjeno 20 doza prema tjelesnoj težini, a kod djevojčica 11 doza. Prosječne vrijednosti trombocita kod dječaka su bile 18,4 a kod djevojčica 16,3. U fazama konsolidacije i reindukcije primjena suportivne terapije krvi je bila znatno manja. **Zaključak:** Suportivna terapija derivatima krvi je veoma važna, jer utiče na status djeteta a samim tim i na ishod liječenja.

Ključne riječi. Suportivna terapija, derivati krvi, akutna leukemija kod djece

and 11 doses in girls. The average values of platelets in boys were 18.4, while the same were 16.3 in girls. In the stages of consolidation and reinduction, the use of supportive therapy of blood was significantly smaller. **Conclusion:** Supportive therapy with blood derivates is very important because it affects the status of a child, and hence the outcome of the treatment.

Keywords: supportive therapy, blood derivates, acute leukaemia in children

PACIJENTI KLINIKE ZA DJEČIJE BOLESTI TUZLA OTPUŠTENI UZ MEHANIČKU VENTILACIJU U KUĆNIM USLOVIMA

Sabina Salkanović Delibegović,Gordana Radoja
Klinika za dječije bolesti, JZU UKC Tuzla, Bosna i Hercegovina

Cilj: Predstaviti seriju slučajeva pacijenata koji su uspješno otpušteni uz mehaničku ventilaciju u kućnim uslovima. **Metode:** Retrospektivnom analizom medicinske dokumentacije u periodu 01.01.2014.g. do 31.12.2017.g Odjeljenja intenzivne terapije i njege, analizirali smo pacijente koji su otpušteni kući uz neki vid mehaničke ventilacije. Ova djeca su hronični pacijenti sa kompleksnim medicinskim potrebama, a u toku boravka u Odjeljenju intenzivne njege nisu se stekli uslovi za samostalno disanje te su imali potrebu za dugotrajnom mehaničkom ventilacijom. Mehanička ventilacija u kućnim uslovima je dobro prihvaćena za djecu sa hroničnom respiratornom insuficijencijom. Neka djeca imaju potrebu za doživotnom ventilacijom. Najčešća

PATIENTS OF CHILDREN'S HOSPITAL TUZLA DISCHARGED WITH MECHANICAL VENTILATION AT HOME

Sabina Salkanović Delibegović, Gordana Radoja
Clinic for Children's Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Objective: Present a series of cases of patients who have successfully been released with mechanical ventilation at home. **Methods:** Retrospective analysis of medical documentation in Intensive Care Unit (ICU). We analyzed patients who were discharged in the period 01.01.2014.- 31.12.2017. with some kind of mechanical ventilation at home. These children are chronic patients with complex medical needs, and during their stay in ICU, no self-breathing conditions have been created and have had the need for long-lasting mechanical ventilation. Mechanical ventilation at home is well accepted for children with chronic respiratory failure. Some children have a need for lifelong ventilation. The most common basic diseases that lead to chron-

osnovna oboljenja koja dovedu do hronične respiratorne insufcijencije i potrebe za mehaničkom ventilacijom su respiratorna, neuromišićna, neurološka, urođene anomalije, tumori, metaboličke bolesti. Adekvatna ventilacija se može provesti preko traheostome (invazivna ventilacija) ili preko maske i sličnih pomagala do dišnih puteva (neinvazivna ventilacija). Većina djeca sa traheostomom su zapravo imali životno ugrožavajuću bolest ili stanje, te su liječeni u Odjeljenju intenzivne njege. Iako je u pitanju relativno mali broj ovih pacijenata u odnosu na ukupan broj pacijenata, ipak oni zauzimaju značajno mjesto po dužini i broju hospitalizacija te po broju ponavljanih zdravstvenih usluga. **Rezultati:** U četverogodišnjem periodu, od pacijenata koji su liječeni u Odjeljenju intenzivne terapije i njege, 6 pacijenata je steklo uslove i uspješno otpušteno kući uz mehaničku ventilaciju. Pacijenti se prate ambulantno, 5 djece koja su na invazivnoj mehaničkoj ventilaciji nisu imali potrebu za ponovljenom hospitalizacijom usljed pogoršanja ili komplikacija ventilacije. Jedan pacijent je imao potrebu za ponovljenim hospitalizacijama, ta pacijentica je bila na neinvazivnom modu mehaničke ventilacije i roditelji su odbijali traheostomiju. Njen ishod je bio smrtan. **Zaključci:** Liječenje i dugotrajno zbrinjavanje pacijenata sa kompleksnim medicinskim potrebama je veliki izazov za ljekare, medicinsko osoblje ali i kompletan zdravstveni sistem pa i društvenu zajednicu. Veliki iskorak je napravljen za djecu koja imaju potrebu za mehaničkom ventilacijom, te bilježimo značajne rezultate u vođenju pacijenata na mehaničkoj ventilaciji u kućnim uslovima.

Ključne riječi: mehanička ventilacija u kućnim uslovima, djeca sa medicinski kompleksnim zahtjevima, spinalna mišićna atrofija

ic respiratory insufficiency and the need for mechanical ventilation are respiratory, neuromuscular, neurological, congenital anomalies, tumors, metabolic diseases. Adequate ventilation can be carried out through tracheostom (invasive ventilation) or through a mask and similar devices to the airways (non-invasive ventilation). Most children with tracheostomy actually had a life-threatening disease or condition, and were treated in the ICU. Although it is a relatively small number of these patients compared to the total number of patients, they still occupy a significant place in terms of length and number of hospitalizations and the number of repeated health services. **Results:** In a four-year period, of patients treated in the ICU, 6 patients received conditions and were successfully released home with mechanical ventilation. Patients are being followed ambulatory, and 5 children who did not have a need for repeated hospitalization due to invasive mechanical ventilation due to deterioration or complications of ventilation. One patient had a need for repeated hospitalization, this patient was on a non-invasive mode of mechanical ventilation and the parents refused tracheostomy. Her outcome was dead. **Conclusions:** The treatment and long-term care of patients with mediacl complexity is a great challenge for doctors, medical staff, as well as the entire health system and the community. A big step is made for children who need mechanical ventilation, and we record significant results in managing patients on mechanical ventilation at home.

Key words: mechanical ventilation at home, children with medical complexity, spinal muscular atrophy

KLINIČKE KARAKTERISTIKE I NIVO VITAMINA D KOD NOVOOTKRIVENIH PEDIJATRIJSKIH TIP 1 DIABETES MELLITUS PACIJENATA

Sniježana Hasanbegović, Amila Ključić
Univerzitetski Klinički Centar Sarajevo,
Pedijatrijska Klinika Sarajevo,
Bosna i Hercegovina

Pozadina: D vitamin je neophodan za metabolizam kostiju, ali ima ulogu i u regulisanju imunoloških procesa i u stimulaciji receptora za insulin što poboljšava njegovu aktivnost. Istovremeno 70% ukupne populacije ima nedostatak vitamina D. **Cilj:** Procijeniti kliničke karakteristike i nivo vitamina D kod novootkrivenih pedijatrijskih TIP 1 diabetes mellitus pacijenata **Metode:** Novootkriveni pedijatrijski T1DM pacijenti iz zadnjih 5 godina evaluirani su prema kliničkim karakteristikama: pol, starost, HbA1c C peptid I / II, IA2, Anti GAD i nivo D vitamina. **Rezultati:** Analizirali smo 129 pacijenata (69 M / 60 F), srednje dobi 9,6 godina (1-18 godina), srednjeg HbA1c 9,8% (7,8-13,2%), srednji C peptid I / 190 i II / 220 pmol / l. Prosjek IA2 bio je 120 a Anti GAD 428 (oba ref.<10). Srednji nivo vitamina D bio je 9,8 ng / ml (<3 - 40,5). 80% pacijenata imali su nizak nivo vitamina D (30-50 ng / ml), kod 65% bio je <20 ng / l, a kod 38% <10 ng / ml. Pacijenti sa višim HbA1c imali su niži nivo vitamina D ; pacijenti sa višim nivoom oba antitijela imali su niži nivo vitamina D. **Zaključci:** Većina pedijatrijskih pacijenata sa novootkrivenim TIP 1 diabetes mellitusom imala je nizak nivo vitamina D koji je u odnosu sa lošijim HbA1c i sa višim nivoom autoantitijela. Dugotrajna supstitucija vitamina D kod svih novootkrivenih T1DM pedijatrijskih pacijenata sa niskim nivoom vitamina D biće korisna u regulaciji dijabetesa i očuvanju rezidualnog inzulina.

Ključne riječi: TIP 1 diabetes mellitus, D vitamin, deficijencija

CLINICAL FEATURES AND D VITAMIN LEVEL IN PEDIATRIC TYPE 1 DIABETES MELLITUS PATIENTS

Snijezana Hasanbegovic, Amila Kljucic
University Clinical Center Sarajevo, Pediatric Clinic, Sarajevo, Bosnia and Herzegovina

Background: D vitamin is necessary for bone metabolism but has role in regulation of immune processes and in stimulation of insuline receptors what enhances insulin activity. In the same time 70% of all population have lack of vitamin D. **Objective:** To evaluate clinical features and D vitamin level in pediatric TYPE 1 diabetes mellitus (T1DM) naive patients **Methods:** T1DM naive pediatric patients from last 5 years were evaluated according clinical features: sex, age, HbA1c C peptid I / II, IA2, Anti GAD and D vitamin level. **Results:** We analyzed 129 patients (69 M/60F), mean age 9,6 years (1-18), mean HbA1c 9,8% (7,8-13,2%) , mean C peptid I /190, and II /220 pmol/l. Mean IA2 was 120 and Anti GAD 428 (both ref.< 10). Mean level of D vitamin was 9,8 ng/ ml (<3 - 40,5). Low level of D vitamin (ref. 30-50 ng/ml) was in 80% of patients and in 65 % D vitamin was < 20 ng/l , and in 38 % was <10 ng/ ml. Patients with higher HbA1c had lower D vitamin levels; patients with higher level of both antibodies had lower level of D vitamin. **Conclusion:** Most of naive pediatric T1DM patients had low level of D vitamin what is in corelation with worse HbA1c and with higher level of autoantibodies. Long term supplementation with D vitamin for all naive T1DM pediatric patients with low D vit levels will be helpful in diabetes regulation and in preservation of residual insuline.

Key words: TYPE 1 diabetes mellitus, D vitamin , deficiency

OD MALE OGREBOTINE U VRTIĆU DO PRESEPTALNOG CELULITISA

Dragica Šakić
Specijalistička pedijatrijska ordinacija,
Zagreb, Hrvatska

Preseptalni celulitis je infekcija kapka i okolne kože ispred orbitalnog septuma. Ograničen je na vjeđu i suznu vrećicu. Najčešće je uzrokovan traumom lica ili očnog kapka, ubodom insekta ili neposrednom infekcijom gornjih dišnih puteva. Klinički simptomi su: edem i crvenilo vjeđa ili područja suzne vreće, bez ispada zjeničnih reakcija, motiliteta i vidne oštrine oka. Bolesnik je četverogodišnje vrtićko dijete koje je u nespretnoj vršnjačkoj igri zadobilo ogrebotinu na desnom kapku. Kako je ogrebotina bila minorna, odgajatelj nije pozvao roditelje s posla, niti su roditelji pri preuzimanju djeteta smatrali shodnim da dijete odvedu na pregled. Inače dječak ima urednu perinatalnu anamnezu i urednog je rasta i razvoja te vrlo rijetko ima respiratorne infekte. Redovito je cijepljen po kalendaru cijepljenja. Sutradan se dječak probudio sa otokom desnog gornjeg kapka, s crvenilom i bolom u oku te povišenom temperaturom 39°C aksilarno. Hitno je odvezen u pedijatrijsku kliniku gdje je hospitaliziran 13 dana. Pri prijemu učinjeni laboratorijski nalazi: CRP 146,7 mg/L, leukociti 23,1x109/L, neutrofilni granulociti 82,7 %. Pregled oftalmologa: koža gornjeg desnog kapka edematozna, crvena i bolna na dodir. BMS desnog oka: oteklina u potpunosti zatvara vjeđni rasporak, bulbarna spojnica mirna. MSCT pregled mozga, orbita i paranazalnih sinusa: uredan. CT mozga, PNS i orbita: rubna sluznična reakcija oba maksilarna sinusa, naglašenije desnog, te desnog sfenoidnog sinusa i etmoidnih celula. Koštane strukture orbita i sinusa izgledaju intaktne. ORL: postavljene efedrinske krpice i učinjena toaleta nosa. Bris rane: Staphylococcus aureus. Hemokultura: sterilna. Th: Klavocin, Lendacin, a budući da nije došlo do adekvatnog odgovora na tera-

FROM A SIMPLE SCRATCH TO PRESEPTAL CELLULITIS

Dragica Šakić, Specialist Pediatric Ordination,
Zagreb, Croatia

Preseptal cellulitis is an inflammation and infection of the eyelid and portions of skin around the eye, anterior to the orbital septum. It is most commonly caused by breaks in the skin around the eye leading to subsequent spread to the eyelid and also from insect bites or pansinusitis. The clinical symptoms are edema and redness of the eyelids that may include the area of the lacrimal sac, with normal pupillary reactions, eye motility and visual acuity. The patient is a 4 year old preschool child who was scratched on his right eyelid during a clumsy peer-to-peer game. As the scratch was minor, the teacher did not call the parents at work, nor did the parents consider taking the child to the primary pediatrician. Otherwise, the boy has a normal perinatal history and growth and development and rarely has respiratory infections. He was regularly vaccinated according to the recommended schedule. The next day, the boy woke up with a swollen, red right eyelid, a painful eye and an elevated temperature of 39° C. He was urgently taken to a nearby pediatric clinic where he was hospitalized for 13 days. The laboratory findings were: CRP 146.7 mg /L, leukocytes 23.1x109/L, neutrophil granulocytes 82.7 %. Overview of the ophthalmologist: right eyelid skin is edematous, red and painful to the touch. Slit lamp exam of the right eye: the swelling completely closes the palpebral fissure, bulbar conjunctiva is normal. MSCT of the brain, orbits and paranasal sinuses: normal. CT of the brain, PNS and orbits: marginal mucosal reaction of both maxillary sinuses, right more pronounced, also of the right sphenoid sinus and ethmoid cells. Bony structures of the orbits and sinuses appear intact. ENT: Ephedrine nasal drops and nasal drainage. Wound swab: Staphylococcus aureus. Blood culture

piju (CRP 180,7mg/L, leukociti 28,27x109/L, neutrofili 90,1%, i dalje prisutan edem vjeđe i sinusa) liječenje je nastavljeno Tazocinom i Targocidom 8 dana. Kontrolni laboratorijski nalazi uredni. Prisutna je diskretna ptoza desnog kapka i blaži eritem u fazi regresije. Bitno je naglasiti da veličina povrede ima manju ulogu u nastanku ozbiljnih komplikacija od eventualne bakterijske superinfekcije.

was sterile. Since there was no adequate response to previous therapy (Klavocin, Lendacin) [CRP 180.7 mg / L, leukocytes 28.27x109 / L, neutrophils 90.1%, edema of the eyelid and sinuses was still present], the treatment was continued with Tazocin and Targocid for 8 days. Control laboratory findings were normal. There was a discrete ptosis of the right eyelid and mild erythema in the regression phase. It is important to emphasize that a size of injury has a smaller role in the emergence of serious complications than possible bacterial superinfection.

KONGENITALNI HIPOTIREOIDIZAM- PRIKAZ BOLESNIKA

Indira Abdulović, Ismir Mrkonja[1], Bajrić Amra[1], Emir Abdulović[1], Belma Karadža[2], Elma Hasković- Rustempašić[2]
JU Bolnica Travnik - Travnik
[1]Bolnica za plućne bolesti i TBC – Travnik
[2]Dom Zdravlja Bugojno, Bosna i Hercegovina

Kongenitalna hipotireoza (KH) je stanje nedevoljne sinteze i sekrecije tireoidnih hormona novorođenčeta uzrokovano poremećajima štitnjače, koji su nastali u momentu začeća ili kasnije u toku intrauterinog života. Incidenca KH u europskim zemljama kreće se u rasponu od 1:3500 do 1: 7300 živorođene novorođenčadi. U slučaju da ostane neprepoznat i liječenje započne kasno, KH dovodi do ireverzibilnih oštećenja centralnog živčanog sistema i trajne mentalne retardacije. Terapija se započinje u toku prvog mjeseca života. Cilj rada je upozoriti na značenje ranog prepoznavanja kliničkih manifestacija bolesti, te blagovremeno uvođenje terapije koja sprječava lošu prognozu. Prikazano je muško novorođenče rođeno 07.10.2012. godine u 14:00. Porođaj

CONGENITAL HYPOTHYROIDISM-CASE REPORT

Indira Abdulović[1], Ismir Mrkonja[1], Amra Bajrić[1], Emir Abdulović[1], Belma Karadža[2], Elma Hasković-Rustempašić[2]
Public Institution Hospital Travnik, Travnik, Bosnia and Herzegovina
[1]Hospital for Pulmonary Diseases and TBC, Travnik
[2] Health Center Bugojno, Bugojno, Bosnia and Herzegovina

Congenital hypothyroidism (CH) is the state of insufficient synthesis and secretion of thyroid hormones caused by thyroid disorders, which occurred at the time of conception or later during intrauterine life.The incidence of congenital hypothyroidism in European countries ranges from 1: 3500 to 1: 7300 live-born infants. In case that CH remains unrecognized and treatment starts late, it leads to irreversible damage to the central nervous system and permanent mental retardation. To prevent this demage, therapy must be started during the first month of life.The aim of the report is to warn about the importance of early recognition of clinical manifestations of the CH and timely initiation of therapy to prevent bad prognose.

dovršen prirodnim putem u 41 nedelji gestacije, PM 3800/51/35, Apgar 10/10. Na prvom pregledu novorođenče ružičaste kože, glasnog plača, bez stigmata i kongenitalnih anomalija. Glava pravilna, VF 3x4cm u razini okolnih kostiju. Oči zatvorene, nosnice prohodne, uške pravilno modelirane, usna duplja b.o.Vrat kratak. Grudni koš pravilno sveden, respiratorno obostrano pokretan. Auskultatomo nad srcem i plućima uredan nalaz. Trbuh mekan, bez znakova organomegalije. Genitalije muškog tipa, testisi u skrotalnoj vreći. Ekstremiteti bez otoka i deformiteta. Tonus zadovoljavajući, refleksi se izvode, Moro kompletan. Započet podoj, tolerisalo obroke. Mekonij u prvom danu. Otpušteno sa porodilišta uz savjete za njegu i ishranu. U dvadesetčetvrtom danu života novorođenče hospitalizirano zbog produljene žute prebojenosti kože te scora za hipotireozu koji je bio 7/15(score >5 sugeriše hipotireoidizam). Novorođenče je imalo gotovo kompletnu kliničku sliku KH- umbilikalnu herniju, veliki jezik, produljen icterus, trajanje gestacije > 40 gn, PT> 3500 te hrapavu i suhu kožu. Na drugu stranu veoma je aktivno, motorika uredna ima redovne stolice, doji, napreduje u TM. Na negativan nalaz skrininga na hipotireozu te povišen nivo TSH uz uredne FT3 I T4 iz venske krvi ordinirana terapija u toku prvog mjeseca života. U prvih šest mjeseci kontrolni pregledi svakih 4 sedmice, kasnije do godine svaka 2 mjeseca, a u drugoj i trećoj godini svaka 3 mjeseca. Danas je to dječak u dobi od 5 godina koji se ne razlikuje od svojih vršnjaka.

Ključne riječi: novorođenče, kongenitalna hipotireoza

Our patient was male, born at 2 pm 7th October 2012. The childbirth is completed naturally at 41 weeks of gestation. BW 3800 g, BL 51 cm, Apgar 10/10. First physical examination was normal, without stigmata and congenital anomalies. The configuration of the head was correct, the big fontanel was 3x4 cm in the level of the surrounding bones. Eyes closed, nostrils viable, ears correctly modeled. Oral cavity without abnormalities. Chast configuration was normal, movable on both sides during respiration. Auscultation finding above heart and lung were normal. The abdomen was soft on palpation, without palpable organomegaly. Male type of genitalia, testicles in the scrotal bag. Extremities were without abnormalities. Muscle tone was satisfactory, reflexes are performed, Moro reflex was complete. Breastfeeding was early started, meals were tolerated. Meconium had at afternoon, at first day. Discharged with advice for care and nutrition. At 24th day of life, newborn was admitted at our hospital because of prolonged jaundice and increased score for hypothyreosis 7/15 (score above 5 suggesting hypothyreosis). The newborn had almost complete clinical presentation of congenital hypothyroidism (umbilical hernia, large tongue, prolonged icterus, gestation period above 40 weeks, BW over 3500 g, and rough and dry skin). On the other side, the newborn is very motor-active, has regular stools, breast-feeding, advances in body mass. Despite negative findings of the performed newborn hypothyroidism screening and normal FT3 and FT4 levels from the venous blood, acording to clinical presentation and elevated TSH levels, the therapy was started during the first month of life. In the first 6 months from begining of therapy, a control examination were performed every 4 weeks, later, up to 1 year of age, every 2 months, and in the second and third year of life every 3 months. Today, it is a boy at the age of 5, who does not differ from his peers.

Key words: newborn, congenital hypothyroidism

KRONIČNI SUPURATIVNI TIREOIDITIS (FISTULA PIRIFORMNOG SINUSA U RAZMATRANJU)

Željka Bilinovac, Jelena Nikolić,
Marija Šandrk, Iva Tomić
Klinika za dječje bolesti SKB Mostar,
Bosna i Hercegovina

Cilj: Cilj našeg rada bio je ukazati na rijetku pojavu kroničnog tireoiditisa u djece. **Metode:** Djevojčica u dobi od 6 godina i 3 mjeseca prvi put se javila u našu kliniku. Često je imala infekcije respiratornog trakta koje su liječene antibiotskom terapijom svakih dva mjeseca. Uz to se žalila na otežano gutanje. Osam dana pred prijem djevojčica je bila visoko febrilna te je otežano gutala i kašljala. Treći dan bolesti, zbog povišenih upalnih parametara i sumnje na akutni bronhitis ordinirana joj je antibiotska terapija. Sedmi dan i dalje je bila febrilna, a pojavila se i oteklinu s lijeve strane vrata te bol u uhu. U kliničkom statusu: vrat: anteriorno lijevo, palpabilna bolna oteklina uz palpabilne limfne čvorove vrata. Pluća: auskultacijski difuzno, strugavi hropci. Rentgenogramom je verificirana atipična pneumonija te se djevojčica primila na Odjel za pulmologiju, a zatim na Odjel za endokrinologiju i metabolizam. Tijekom boravka učinjeni su ultrazvuk štitnjače, punkcija čvora, pasaža jednjaka, CT vrata i faringoskopija. **Rezultati:** Ultrazvukom štitnjače verificirano je u gornjoj polovini lijevog režnja hipoehogeno područje, nepravilnih rubova, oštro ograničeno prema ostalom tkivu. U anteriornom dijelu navedenog područja uočio se nepravilni tračak zbog kojeg smo postavili sumnju na postojanje fistule piriformnog sinusa. Uslijedila je punkcija čvora, pasaža jednjaka i CT vrata kojima smo opravdali sumnju na postojanje fistule piriformnog sinusa. Djevojčica je upućena u Klinički bolnički centar Zagreb radi nemogućnosti izvođenja magnetne rezonance vrata i postavljanja definitivne dijagnoze. U Zagrebu, u Zavodu za otorinolaringologiju, učinjena je eksplora-

ACUTE SUPPURATIVE THYROIDITIS (FISTULA OF THE PYRIFORM SINUS IN CONSIDERATION)

Željka Bilinovac, Jelena Nikolić,
Marija Šandrk, Iva Tomić
Clinic for Children's Diseases, University Clinical Hospital Mostar, Mostar,
Bosnia and Herzegovina

Objective: The aim of our work was to point out to the rare occurrence of chronic thyroiditis in children. **Methods:** The girl at the age of 6 years and 3 months reported to our clinic for the first time. She often had infections of respiratory tract that have been treated with antibiotic therapy every two months. Next to that, she complained about difficult swallowing. Eight days prior to the admission the girl was very feverish and had difficulty swallowing and coughing. On the third day of the disease, due to elevated inflammatory parameters and suspicion of acute bronchitis, antibiotic therapy was administered to her. On the seventh day she was still feverish and swollen on the left side of the neck and had ear pain. In clinical condition - neck: anterior left, palpable painful swelling with palpable lymph node neck. Lungs: auscultationally diffuse, rhonchi. The atypical pneumonia was verified in the Roentgenogram and the girl has been admitted at the Department of Pulmonologyand then at the Department of Endocrinology and Metabolism. During her stay, thyroid ultrasound, nodule puncture, barium swallow test of the esophagus, CTof the neck and pharyngoscopy were performed. **Results:** In the upper half of the left lobe, by means of a thyroid ultrasound, a hypoehogenic area with irregular edges, sharply limited from the rest of the tissue was verified. In the anterior part of the aforementioned area, an irregular glimmer was observed which caused doubt about the existence of fistula of the pyriform sinus. A nodule puncture, barium swallow test of the esophagus, and CTof neck were performed, which justified the suspicion of the existence of fistula

cija vrata i lobektomija lijevog režnja štitnjače. Patohistološki nalaz pokazao je kronični tireoiditis. **Zaključak:** Patohistološkim nalazom dokazali smo da je uzrok antibiotskoj terapiji svaki put bila već postojeća upala, kronični supurativni tireoiditis. Nakon lobektomije lijevog režnja, djevojčici se više nisu ponovili navedeni simptomi niti joj je ordinirana antibiotska terapija iz tih razloga.

Ključne riječi: bronhitis, pneumonija i fistula. CT – kompjuterizirana tomografija

of the pyriform sinus. The girl was referred to the Clinical Hospital Center in Zagreb due to the impossibility of performing an magnetic resonance imaging and to set a definitive diagnosis. In Zagreb, at the Department of Otorhinolaryngology, neck exploration and lobectomy of the left lobe of the thyroid gland were performed. Pathohistological findings have shown chronic thyroiditis. **Conclusion:** With a histopathological finding we have proved that the cause of antibiotic therapy has been the already existing inflammatory, chronic, suppurative thyroiditis each time. After the left gland lobectomy, girl no longer experienced repetition of the mentioned symptoms nor wasshe administered antibiotic therapy for those reasons.

Key words: bronchitis, pneumonia and fistula. CT - computed tomography

OSJETLJIVOST I SPECIFIČNOST PROKALCITONINA I C-REAKTIVNOG PROTEINA U DIJAGNOSTICI SEPSE NOVOROĐENČETA

Jerko Brzica[1]
Ana Galić 2 ,Marjana Jerković Raguž[1], Ivanka Mikulić[3]
1. Klinika za dječje bolesti SKB Mostar.
2. Farmaceutski fakultet Mostar - Sveučilište u Mostaru
3. Zavod za laboratorijsku dijagnostiku SKB Mostar

Cilj istraživanja: Cilj ovog istraživanja je bio utvrditi dijagnostičku specifičnost i osjetljivost bi ljega prokalcitonina (PCT)i C-reaktivnog proteina (CRP) u dokazivanju sepse u novorođenčadi. **Metode:** U istraživanje je sudjelovalo 27 novorođenčadi koja su hospitalizirana u Sveučilišnoj kliničkoj bolnici Mostar zbog sumnje na novorođenačku sepsu tijekom kolovoza 2017.godine. Za svakog ispitanika su

SENSITIVITY AND SPECIFICITY OF PROCALCITONIN AND C-REACTIVE PROTEIN IN DETECTION OF NEWBORN SEPSIS

Jerko Brzica[1]
Ana Galić[2] , Marjana Jerković Raguž[1], Ivanka Mikulić[3]
1. Clinic for Children´s Disease UCH Mostar
2. Faculty of Pharmacy Mostar - University of Mostar
3. Department of Laboratory Diagnostics UCH Mostar

Aim: The aim of this study was to determine the diagnostic specificity and sensitivity of procalcitonin (PCT)and C-reactive protein (CRP) in detection of newborn sepsis. **Method:** The study involved 27 newborns hospitalized at the University Clinical Hospital of Mostar due to suspected newborn sepsis in August 2017. For each respondent, informed parents' consent was collected. The research

prikupljeni informirani pristanci roditelja. Protokol istraživanja odobren je od strane Etičkog povjerenstva SKB Mostar. Koncentracija PCT-a određena je dvostupanjskim imunokemijskim testom za kvantitativno određivanje PCT u serumu koji se temelji na primjeni kemiluminiscentne imunokemijske metode s fleksibilnim testnim protokolima. Za usporedbu učestalosti pojavnosti varijabli korišten je χ2 (Hi-kvadrat test). ROC analiza korištena je za odnos dijagnostičke osjetljivosti i dijagnostičke specifičnosti. **Rezultati:** Prema rezultatima testa može se reći da postoji statistički značajna povezanost između CRP i PCT tj. da povećane ili smanjene koncentracije PCT koreliraju s koncentracijom CRP-a (p =0,009). Utvrđena osjetljivost testa ukazuje da se na osnovu granične vrijednosti koncentracije PCT od 0,93 ng/mL može točno dijagnosticirati 87% novorođenčadi sa znakovima infekcije koja dovodi do sepse, dok bi kod preostalih 13% novorođenčadi došlo do pogrešne dijagnoze. Istraživanje je pokazalo kako se na graničnoj vrijednosti CRP-a od 6.35mg/L mL može točno dijagnosticirati 82% novorođenčadi sa znakovima infekcije koja dovodi do sepse, dok bi kod preostalih 18% novorođenčadi došlo do pogrešne dijagnoze. **Zaključak:** Prokalcitonin i C-reaktivni protein su dobri pokazatelji sepse kod novorođenčadi. Za biljeg prokalcitonin osjetljivost je 87% i specifičnost 54,5%, a za C-reaktivni protein osjetljivost je 81% i specifičnost 60%.

Ključne riječi: Novorođenče, prokalcitonin, C-reaktivni protein, sepsa

protocol was approved by the Ethics Committee of the UCH Mostar. PCT concentration was determined by a two-stage immunochemistry test for quantitative PCT serum determination based on the use of chemiluminescent immunochemical methods with flexible test protocols. The χ2 (Hi-quadratic test) was used to compare the frequency of variables. ROC analysis was used for the relation of diagnostic sensitivity and diagnostic specificity. **Results:** According to the results of the test it can be said that there is a statistically significant correlation between CRP and PCT, i.e. that increased or decreased PCT concentrations correlate with CRP concentration (p = 0.009). Determined sensitivity of the test indicates that, based on the PCT concentration limit of 0.93 ng / mL, it can accurately diagnose 87% of newborns with signs of infection leading to sepsis, while the remaining 13% of newborns had a wrong diagnosis. Research has shown that at the limit value of 6.35mg / L mL of CRP can accurately diagnose 82% of newborns with signs of infection leading to the sepsis, while the remaining 18% of newborns will have a wrong diagnosis. **Conclusion:** Procalcitone and C-reactive protein are good indicators for newborns with sepsis. For the indicator, procalcitonin, sensitivity is 87% and specificity 54.5%, and for C-reactive protein sensitivity is 81% and specificity 60%.

Key words: Newborns, procalcitonin, C-reactive protein, sepsis

SPECIFIČNOST I OSJETLJIVOST FEKALNOG KALPROTEKTINA KOD UPALNIH BOLESTI CRIJEVA

Cvitković Iva
Kelava Svjetlana; Tomić Teo
Klinika za dječje bolesti, Sveučilišna klinička bolnica Mostar, Bosna i Hercegovina

Cilj: Utvrditi značajnost laboratorijskog nalaza fekalnog kalprotektina u dijagnostici upalnih bolesti crijeva u pedijatrijskoj populaciji. **Metode:** Ispitanici su bolesnici sa Odjela gastroenterologije Klinike za dječje bolesti SKB Mostar u razdoblju od 2015. -2017. godine koji su u sklopu gastroenterološke obrade radili nalaz kalprotektina iz stolice. Vrijednost fekalnog kalprotektina određena je imunoenzimskom ELISA metodom, naziv testa je Alegria Calprotectin. Na osnovu nalaza kolonoskopije i biopsije crijevne sluznice potvrđena je dijagnoza upalne bolesti crijeva. Pri statističkoj obradi podataka ROC analiza unutar programa MedCalc korištena je za dijagnostičku osjetljivost i specifičnost. Za dokazivanje povezanosti varijabli korišten je χ2 (Hi-kvadrat test) i Fisherov egzaktni test. **Rezultati:** Od 46 ispitanika kojima je rađen nalaz fekalnog kalprotektina 13 (28.3%) ispitanika ima postavljenu dijagnozu jedne od upalnih bolesti crijeva (Chronova bolest ili ulcerozni kolitis) (P < 0.0001). Prema laboratorijskom referentnom intervalu normalnu vrijednost fekalnog kalprotektina (<50 μg/g) ima 45.7% ispitanika, među kojima nema oboljelih. Blago povišena vrijednost (50-200 μg/g) ima 15.2% ispitanika te od toga samo jedan ispitanik sa dijagnosticiranom upalnom bolesti crijeva. Značajno povišenu vrijednost fekalnog kalprotektina (>200 μg/g) ima 39.1% ispitanika te je od toga 12 oboljelih (P < 0.0001). Od ispitanika sa povišenom vrijednosti fekalnog kalprotektina, 26.1% je imalo pozitivan nalaz kolonoskopije na upalnu bolest crijeva (P = 0,0015). Osjetljivost fekalnog kalprotektina u upalnim bolestima crijeva je 92.3%, a specifičnost pretrage je 87.9% ukoliko kao graničnu vrijednost

SPECIFICITY AND SENSITIVITY OF FECAL CALPROTEKTIN FOR INFLAMMATORY BOWEL DISEASE

Cvitković Iva
Kelava Svjetlana; Tomić Teo
Clinic for Children's Diseases, University Clinical Hospital Mostar, Bosnia and Herzegovina

Objective: The aim of this study was to determine the significance of fecal calprotectin as marker of bowel inflamation children with inflammatory bowel disease. **Methods:** The study included subjects with fecal calprotectin from Department of Gastroenterology, Clinic for Children's Diseases, in the period 2015 -2017. Fecal calprotectin was measured using a simple enzyme-linked immunosorbent assay (ELISA); the test was Alegria Calprotectin. Diagnosis of inflammatory bowel disease was confirmed by colonoscopy and mucous biopsy. In statistical data processing, the ROC analysis within the MedCalc program was used for diagnostic sensitivity and specificity. The χ2 (hi-square test) and Fisher's exact test were used to prove the correlation of variables. **Results:** Of 46 subjects with fecal calprotectin 13 (28.3%) are diagnosed with one of the inflammatory bowel diseases (Chronus disease or ulcerative colitis) (P<0.0001). According to the laboratory reference interval, the normal value of fecal calprotectin (<50μg/g) has 45.7% of subjects, including no patients. Slightly elevated value (50-200 μg/g) has 15.2% of subjects, which only one is with diagnosed inflammatory bowel disease. Significantly higher values of fecal calprotectin (>200 μg/g) have 39.1% of subjects, and 12 of that are patients (P <0.0001). Of the subjects with elevated fecal calprotectin, 26.1% had a positive finding of colonoscopy for inflammatory bowel disease (P = 0.0015). The sensitivity of fecal calprotectin for inflammatory bowl diseases is 92.3%, and the specificity is 87.9% if the limit value is >383 μg/g. (AUC 0.946; P <0.0001).

uzmemo >383 μg/g. (AUC 0.946; P<0.0001). **Zaključak:** Istraživanje je pokazalo kako se pri vrijednosti fekalnog kalprotektina >383 μg/g može točno dijagnosticirati upalna bolest crijeva kod 92.3% ispitanika. Zbog toga bi se trebao koristiti u dijagnostici upalnih bolesti crijeva jer za razliku od kolonoskopije pretraga nije invazivna.

Ključne riječi: kalprotektin, upalna bolest crijeva, Chronova bolest, ulcerozni kolitis

Conclusion: Research has shown that at a fecal calprotectin >383 μg/g can accurately diagnose inflammatory bowel disease at 92.3% of subjects. Calprotectin in the patient's feces can be used as a rational fecal marker for intestinal inflammation in clinical practice because it is simple and noninvasive when compared with colonoskopy.

Key words: calprotectin, inflammatory bowel disease, Chron's disease, ulcerative colitis

HENOCH- SCHÖNLEIN PURPURA - PRIKAZ SLUČAJA

Evelina Čehajić
Privatna pedijatrijska ordinacija „Suncokret“
Sarajevo, Bosna i Hercegovina

Cilj: Upozoriti na mogućnost pojave vaskulitisa kod djece u okviru akutnih respiratornih infekcija kako na koži kao vidljive purpure, tako i na organima, te na opasnost komlikacija. Djevojčica u dobi 4,5 godine, redovno vakcinisana, sa češćim respiratornim infektima. Dva dana nakon terapije amoksicilin –klavulonska kiselina zbog upale grla, dobija otok stopala i potkoljenica uz konfluirajući crvenoljubičasti osip potkoljenica , stopala i gluteusa. Ostali klinički nalaz uredan. Laboratorijski nalazi: KS-dif, trombociti, CRP, koagulacija, biohemija , stolica na OK, urin – uredno. Ultrazvuk abdomena uredan. Bris grla Candida sp u velikom broju. Bris nosa Haemophylus influenzae. Stolica – Candida sp u velikom broju. Klinička dijagnoza: Henoch- Schönlein purpura. Provedena terapija: Mirovanje, vitamin C,D+K, antibiotske kapi za nos, antimikotik per os, probiotik. Lokalno na kožu oblog acidi borici 3% i kombucha. Obzirom na negativni nalaz okultnog krvarenja i dobro opće stanje dijete smo liječili ambulantno, bez uključivanja kortikosteroidne terapije. Došlo je do regresije nalaza na koži tokom 5 dana. Kontrolni mikrobiološki nalazi nakon terapije

HENOCH- SCHÖNLEIN PURPURA— DEMONSTRATION OF A CASE

Evelina Čehajić
Private Paediatric Practice „Suncokret“ Sarajevo, Bosna i Hercegovina

Goal: To warn about the possibility of the occurrence of vasculitis in children during the acute respiratory infections in forms of visible purpura on the skin, as well as on internal organs, with the danger of complications. A girl of the age 4,5 years, regularly vaccinated, with common respiratory infections. Two days after the treatment with amoxicillin – clavulanic acid for tonsillitis, she developed swollen feet and shins with confluating plum coloured rash of shins, feet and gluteus. Other clinical assessments were fine. Laboratory tests: KS-dif, CRP, thrombocytes, coagulation, biochemistry, stool for faecal occult blood, urine—fine. Abdominal ultrasound — fine. Throat smear Candida sp in large quantities. Nose smear Haemophylus influenzae. Stool – Candida sp in large quantities. Clinical diagnosis: Henoch- Schönlein purpura. Executed treatment: Rest, vitamins C,D+K, antibiotics in nose drops, antimycotic per os, probiotic. Local skin ointment acidi borici 3% and kombucha. Due to the negative result of the faecal occult blood test and good general state

uredni. **Zaključak:** Kod lakših oblika Henoch- Schönlein purpure, koji se ograničavaju na kožu, mirovanjem, simptomatskom terapijom, uz ciljanu antibiotsku terapiju, a bez uvođenja kortikosteroida moguće dovesti do regresije oštećenja krvnih sudova. Teži oblici sa vaskulitisom crijeva i bubrega zahtijevaju hospitalizaciju, kortikosteroidnu terapiju a ponekad i hirurški tretman.

of the child, the treatment remained in the scope of the clinic, without including the corticosteroids as therapy. Regression of the results on the skin occurred in five days. Control microbiological results after therapy were negative. **Conclusion:** In the less severe forms of Henoch- Schönlein purpure, which remain limited to skin, regression of damage on the blood vessels can be achieved by symptomatic therapy, with targeting antibiotic therapy and rest, without the inclusion of corticosteroids. Severe cases which include intestinal vasculitis and vasculitis of kidneys, require hospitalisation, corticosteroid therapy and perhaps even a surgery.

RAZLOZI I UČESTALOST REHOSPITALIZACIJE NOVOROĐENČADI NAKON OTPUSTA IZ RODILIŠTA

Nikolina Čuvalo[1],
Marjana Jerković Raguž[2],
1. Dom zdravlja Ljubuški.
2. Klinika za dječje bolesti, SKB Mostar.

Cilj rada: Cilj ovog rada je utvrditi učestalost i razloge rehospitalizacije novorođenčadi na Klinici za dječje bolesti Sveučilišne kliničke bolnice Mostar. Dodatni cilj rada je istražiti značajke rehospitalizirane novorođenčadi i prikazati njihov utjecaj na ponovnu hospitalizaciju unutar 30 dana od rođenja. **Ispitanici i postupci:** U istraživanje je bilo uključeno 71 novorođenče rehospitalizirano na Klinici za dječje bolesti Sveučilišne kliničke bolnice Mostar u vremenskom razdoblju od siječnja 2016. godine do siječnja 2017. godine. Ispitivanu skupinu čine djeca koja su zadovoljila kriterij ponovnog bolničkog prijama nakon otpusta iz rodilišta, starosne dobi do 30 dana, zbog razvoja nekog od patoloških stanja. Podatci su prikupljeni na temelju uvida u medicinsku

FREQUENCY AND REASONS FOR NEWBORN READMISSION AFTER DISCHARGE FROM HOSPITAL BIRTH CENTER

Nikolina Čuvalo[1],
Marjana Jerković Raguž[2],
1. Health centre Ljubuski.
2. Clinic for Children's Diseases, UHC Mostar.

The aim of this paper is to determine the frequency and the reasons for newborn's readmission at the Clinic for Pediatric Diseases at the University Clinical Hospital Mostar. An additional aim of the study is to investigate the features of rehospitalized infants and to show their impact on rehospitalization within 30 days of birth. **Methods:** The retrospective study included 71 newborns readmitted at the Clinic of Pediatric diseases during one year of study. The surveyed group consisted of children who met the criterion of hospital readmissions after being released from the hospital birth center, up to 30 days of age, due to the development of some pathological condition. The data were collected on the basis of the medical documentation of the Clinic for Pe-

dokumentaciju Klinike za dječje bolesti SKB Mostar, a u statističkoj analizi korišten je χ2 test. **Rezultati:** Stopa rehospitalizacije, izražena kao rehospitalizirana novorođenčad unutar 30 dana u odnosu na 1 000 živorođenih, iznosila je 38.89%0. Promatrajući zastupljenost pojedinih otpusnih dijagnoza utvrđena je statistički značajna razlika (p=0,002), a najčešći uzroci rehospitalizacije novorođenčadi bili su novorođenačka žutica (26,8 %) i respiratorne infekcije (19,7 %). Veći broj rehospitalizirane novorođenčadi bio je ženskog spola (52,1 %), a u uzorku je značajno bila zastupljenija novorođenčad rođena između 38. i 40. tjedna gestacije, rodne mase 3000 – 4000 g. Također, utvrđeno je kako je multiparitet majki povezan s većim rizikom od rehospitalizacije novorođenčadi, a najveći broj novorođenčadi bio je rođen vaginalnim putem (84,5 %). **Zaključak:** Istraživanje je pokazalo kako su najčešći razlozi rehospitalizacije novorođenčadi bili novorođenačka žutica i respiratorne infekcije, a produžavanjem trajanja boravka u rodilištu nakon rođenja smanjena je učestalost rehospitalizacije u odnosu na prethodne godine.

Ključne riječi: Novorođenče, ponovni prihvat u bolnicu, otpuštanje iz rodilišta, žutica, respiratorne infekcije.

diatric diseases and the χ2 test was used in the statistical analysis. **Results:** The readmission rate, expressed as readmitted infants within 30 days compared to 1,000 live births, was 38.89 ‰. The most common causes for rehospitalization were jaundice (26.8%) and respiratory infections (19,7 %), with a statistically significant difference (P <0.002). More of hospitalized newborns were female (52.1%) and the sample was significantly represented by a newborn born between the 38th and 40th week of gestation, the birth weight 3 000 – 4 000 g. Also, it was found that multiparity is associated with greater risk for newborn readmission and most of the newborns were delivered vaginally (84.5%). **Conclusion:** The research showed that the most common reasons for rehospitalization of newborns were jaundice and respiratory infections, and, compared to previous years, increase of the length of stay after birth reduced the frequency of rehospitalization.

Key words: newborn, hospital readmission, discharge, jaundice, respiratory infections

STRUKTURA MORBIDITETA I RANI MORTALITET NOVOROĐENČADI MALE POROĐAJNE MASE U TUZLANSKOM KANTONU, BOSNA I HERCEGOVINA

Aldina Divanović[1], Denijal Divanović[2]
[1]Zavod za zdravstvenu zaštitu žena i materinstvo Kantona Sarajevo, Sarajevo, BiH
[2]Klinika za ginekologiju i akušerstvo Kliničkog centra Univerziteta u Sarajevu, BiH

STRUCTURE OF MORBIDITY AND EARLY MORTALITY OF LOW BIRTH WEIGHT INFANTS IN TUZLA CANTON, BOSNIA AND HERZEGOVINA

Aldina Divanović[1], Denijal Divanović[2]
[1]Institute for Health Care of Women and Motherhood, Canton Sarajevo, Sarajevo, Bosnia and Herzegovina
[2]Clinic for Gynecology and Obstetrics, University Clinical Center Sarajevo, Sarajevo, Bosnia and Herzegovina

Uvod: Novorođenčad sa malom porođajnom masom (MPM) čine rizičnu grupu zbog visoke perinatalne smrtnosti, sa češćim komplikacijama u novorođenačkom periodu, većom učestalošću kongenitalnih anomalija i sklonija su infekcijama. **Cilj:** Ispitati učestalost rađanja novorođenčadi sa MPM prema spolu, gestacijskoj dobi i porođajnoj masi, te analizirati strukturu morbiditeta i rani mortalitet prema podskupinama porođajne mase. **Materijal i metode:** Retrospektivnim istraživanjem u periodu od 01.01.2007. do 31.12.2011. godine u Klinici za ginekologiju i akušerstvo, UKC Tuzla, Bosna i Hercegovina, obuhvaćeno je 1274 novorođenčadi oba spola, gestacijske dobi od 22. do 42. nedjelje, porođajne mase manje od 2500 grama. **Rezultati:** Malu porođajnu masu (MPM) imalo je 1274 (5,9%) novorođenčadi, od kojih je 1234 (5,7%) živorođeno i 40 (0,2%) mrtvorođeno. Novorođenčad muškog spola bila su statistički značajno zastupljenija (57,92vs42,03;p<0,0001). Najveća učestalost rađanja bila je u težinskoj grupi od 1000-1499 grama, a najmanja u najmanjoj težinskoj grupi od 500-999 grama (3 4, 4 vs11,7;p<0,0001). Novorođenčad sa MPM su najčešće bila gestacijske dobi mlađe od 37. gestacionih nedjelja (56,9%), dvostruko manje ih je rođeno u terminu, a 16,0% novorođenčadi nakon termina porođaja. Najviše novorođenčadi (34,3%) je imalo respiratorne probleme, a na drugom mjestu u strukturi morbiditeta ističe se infekcija (30,1%). Probleme vezane za neurološki sistem imalo je 179 (14,5%) novorođenčadi, a kongenitalne anomalije su verificirane u 12,5% novorođenčadi MPM. Najređi su bili metabolički poremećaji (8,5%). U prvih 7 dana života umrlo je 10,9% novorođenčadi sa MPM. U ranoj neonatalnoj smrtnosti najmanja težinska grupa je bila najzastupljenija (65,9%), novorođenčadi iz težinske grupe 1000-1499 grama je umrlo 22 (16,3%), 11,9% novorođenčadi iz najveće težinske grupe i svega 5,9% tjelesne mase od 1500-1999 grama. **Zaključci:** Učestalost rađa-

Introduction: Infants with low birth weight (LBW) make a risk group due to high perinatal mortality and more frequent complications, congenital anomalies and infections in the newborn period. **The aim:** The aim was to investigate the incidence of LBW infants according to gender, gestational age and birth weight, as well as to analyze the morbidity and early mortality rate according to subgroups of birth weight. **Material and methods:** Retrospective study in the period 1st January 2007 to 31st December 2011 at the Clinic of Gynecology and Obstetrics, University Clinical Center Tuzla, Bosnia and Herzegovina, included 1274 infants of both gender, gestational age 22-42 weeks and birth weight less than 2500 grams. **Results:** Low birth weight (LBW) had 1274 (5.9%) infants, of which 1234 (5.7%) were liveborn and and 40 (0.2%) of them were stillborn. Male infants were statistically significant more represented (57.92 vs 42.03; p<0.0001). The highest incidence of birth was in the weight group of 1000-1499 grams, and the lowest incidence was in the lowest weight group of 500-999 grams (34.4 vs 11.7; p<0.0001). Most often LBW infants were of gestational age less than 37 weeks (56.9%), double less number of them were born at term, and 16.0% of infants were born after the term. Most infants (34.3%) had respiratory problems, while infections had (30.1%) of them. Neurological problems had 179 (14.5%) infants, and congenital anomalies were confirmed in 12.5% of LBW infants. Metabolic disorders were reported the rarest (8.5%). During the first 7 days of life, 10% of LBW infants died. In early nenatal mortality, the lowest weight group was the most frequent (65.9%), the number of died infants from weight group 1000-1499 grams was 22(16.3%), 11.9% of infants from the highest weight group and only 5.9% body mass of 1500-1999 grams. **Conclusions:** The incidence of LBW infants differed significantly according to gender, birth weight and gesta-

nja novorođenčadi sa MPM značajno se razlikovala prema spolu, porođajnoj masi i gestacijskoj dobi. Respiratorne tegobe i infekcije su bile vodeći uzroci morbiditeta, a najrjeđi metabolički poremećaji. Stopa mrtvorođenosti i umrlih do 7. dana starosti je bila najveća u najmanjoj težinskoj grupi.

Ključne riječi: mala porođajna masa, morbiditet, mortalitet

tional age. Respiratory disorders and infection were leading causes of morbidity, while metabolic disorders were the rarest. The mortality rate up to 7 days of life was the biggest in the lowest weight group.

Key words: low birth weight, morbidity, mortality

ANTIBIOTSKA OTPORNOST UZROČNIKA INFEKCIJA MOKRAĆNOG SISTEMA KOD DJECE PREDŠKOLSKE DOBI

Jasminka Durmišević-Serdarević[1], Smajil Durmišević[2], Maja Karač[1], Jasmin Durmišević[3], Šefika Muslić-Ibranović[1].
Dom zdravlja Zenica[1], Institut za zdravlje i sigurnost hrane Zenica[2], Medicinski fakultet Sarajevo[3]

Uvod: Infekcije mokraćnog sistema (IMS) mogu biti značajan uzrok morbiditeta u pedijatrijskoj populaciji. Odabir antibiotika u liječenju zavisi od osjetljivosti uzročnika infekcije. **Cilj:** Utvrditi najčešće bakterijske uzročnike infekcija mokraćnog sistema (IMS) kod djece predškolske dobi u gradskom području Zenice. Utvrditi sveukupnu učestalost pojave antibiotske otpornosti izoliranih uzročnika IMS kod djece u odnosu na prethodnu upotrebu antibiotika. **Ispitanici:** Osnovni statistički uzorak sačinjavala su sva djeca koja su u ispitivanom periodu liječena zbog sumnje na IMS u Službi za predškolsku djecu Doma zdravlja Zenica, a koja su bila starosne dobi do šest godina. **Rezultati:** Značajna bakterijurija je utvrđena kod 5,98% (151) i to 2,89% (41), dječaka i 9,95% (110) djevojčica. Najčešće su oboljevala djece dobi do jedne godine starosti 17,3% (73) djece. Kada su antibiotici primjenjivani u liječanju IMS, ustanovljena je statistički zna-

ANTIBIOTIC RESISTANCE OF MOST COMMON UTI CAUSATIVE AGENS IN PRE-SCHOOL CHILDREN

Jasminka Durmišević-Serdarević[1], Smajil Durmišević[2], Maja Karač[1], Jasmin Durmišević[3], Šefika Muslić-Ibranović[1].
Health Centre Zenica[1], Institute for health and food safety Zenica[2], Faculty of Medicine, Sarajevo[3]

Introduction: Urinary tracts infections (UTIs) can be a significant cause of morbidity in pediatric population. The choice of antibiotic in treatment depends on an infectious agent's sensitivity. **Aim:** This research is aimed at determining what are the most common bacterial agents causing UTI in pre-school children in the city area of Zenica and determining the overall frequency of isolated UTI causative agents antimicrobial resistance in children with respect to the previous antibiotic treatment. **Research subjects:** The basic research sample comprized all children under the age of 6, who were treated for UTI in the Department for pre-school children of the Primary healthcare center Zenica during the research period. **Results:** Significant bacteriuria has been confirmed in 5,98% (151) of children: boys 2,89% (41) and girls 9,95% (110). The most frequently affected were the children under

čajna veza, pojave otpornosti svih izolovanih uzročnika IMS na ampicillin u 119 (p=0,042) i na cefuroksim aksetil u 43 (p=0,035) slučaja. Kod liječenja infekcija drugih sistema antibakterijskim lijekovima, otpornost uzročnika je sa statistički značajnom vezom (p< 0,05),ustanovljena na ceftazidim u 20 (p=0,011), cefixim u 25 (p=0,005) i cefipim u 16 (p=0,016) slučajeva. Analizirajući dužinu prethodne primjene antibiotik (broj dana),ustanovljena je otpornost svih uzročnika ukupno na ampicilin kod 111 (p=0,030), cefaleksin 60 (p=0,039),cefpodoksim 27 (p=0,007), cefazolin 61 (p=0,022), cefepim 17 (p=0,020) djece, kada je liječenje antibiotikom trajalao do pet dana. **Zaključci:** Istraživanjem je ustanovljena značajna pojava otpornosti uzročnika na cefalosporine treće i četvrte generacije u slučajevima prethodnog liječenja antibioticima infekcija drugih organskih sistema osim IMS, posebno kod djece 0-12 mjeseci starosti. Pojava otpornosti uzročnika IMS je bila povezana sa prethodnom upotrebom antibiotika.

Ključne riječi: Infekcije mokraćnog sistema(IMS), antibiotska otpornost, djeca.

the age of 12 months: 17,3% (73). When it comes to treatment, a statistically significant antibiotic resistance to ampicillin and cefuroxime has been confirmed in all causative agents, that being in 119 (p=0,042) and 43 (p=0,035) cases, respectively. In treatment of other organ systems, there has been a statistically significant antibiotic resistance (p< 0,05) confirmed for ceftazidime - in 20 (p=0,011), cefixime - in 25 (p=0,005) and cefepime - in 16 (p=0,016) cases. Analyzing the period of the previous antibiotic treatment (number of days), an antibiotic resistance of all the recognized causative agents has been confirmed to ampicillin – in 111 (p=0,030) cases; cephalexine – in 60 (p=0,039) cases, cefpodoxime – in 27 (p=0,007= cases, cefazolin – in 61 (p=0,022), cefepime - in 17 (p=0,020) cases. The treatment took up to five days. A statistically significant relationship between the antibiotic resistance occurrence and the previous antibiotic treatment was not found. **Conclusions:** This study found that there is a significant link between the occurrence of antibiotic resistance to the third and fourth generation cephalosporins in cases of antibiotic treatment of organ systems other than urinary tract, especially in children under the age of 12 months. The occurrence of antibiotic resistance in UTI causative agents is related to the previous antibiotic treatment and decreases after the last taken antibiotic.

Keywords: Urinary tract infections (UTI), antibiotic resistance, children

SPONTANA RUPTURA ŽELUCA TROGODIŠNJE DJEVOJČICE- PRIKAZ SLUČAJA

Dusko Anić[1], Verica Mišanović[1], Kenan Karavdić [2], Edin Begić[3], Irmina Sefić-Pašić [4],
[1]Pedijatrijska klinika, UKC Sarajevo, Sarajevo, Bosna i Hercegovina
[2]Klinika za dječiju hirurgiju, UKC Sarajevo, Sarajevo, Bosna i Hercegovina
[3]Katedra za Farmakologiju, The Faculty of Medicine - Sarajevo Medical School of the Sarajevo School of Science and Technology University, Sarajevo, Bosnia and Herzegovina
[4]Klinika Za radiologiju, UKC Sarajevo, Sarajevo, Bosna i Hercegovina

Uvod: Cilj rada je prikaz spontane rupture želudca kod trogodišnje djevojčice. Ruptura želudca može nastati u stanjima koja dovode do porasta intraabdominalnog ili intragastričnog pritiska. Razvija se i kod tromboze želudačne koronarne vene. **Pacijenti i metode:** Rad prikazuje slucaj spontane rupture želudca kod trogodišnje djevojčice. **Prikaz slučaja:** Pacijentica je primljena na Pedijatrijsku kliniku zbog iznenada nastalog lošeg općeg stanja sa jakim bolom u trbuhu, povraćanjem, razvojem hipovolemijskog šoka: somnolentna, srčane frekvence 164/min, nemjerljive tenzije, VCP> 5 sec,uz hladnu periferiju ABS: pH 7.1, pCO2 3.17, p02 15.8, HCO3 8.8, BE -17.5, Na 121, K 6.1, lac 5.45. Nakon urađenog ultrazvuka i RTG snimka abdomena operirana od strane dječijeg hirurga unutar 6 sati po prijemu. Operativno se na velikoj krivini želudca nađu multipli defekti sluznice, sa transmuralnim krvarenjem, bez patohistoloskih promjena mišićnog sloja. Nastavak liječenja u Jedinici pedijatrijske intenzivne terapije uz razvoj životno limitirajućih komplikacija : peritonitis, sepsa, intrakranijalna hemoragija i smrti ishod. **Zaključak:** Ruptura želudca izazvana akutnom distenzijom se rijetko javlja kod djece izvan neonatalnog perioda. Ima brz klinicki tok i visoku stopu smrtnosti. Rana dijagnoza i brzi hirurski zahvat su preduvjet da se izbje-

SPONTANEOUS RUPTURE OF THE STOMACH IN 3 YEAR OLD GIRL - CASE REPORT

Dusko Anić[1], Verica Mišanović[1], Kenan Karavedić[2], Edin Begić[3], Irmina Sefić-Pašić[4]
[1]Pediatric Clinic, Clinical Center University of Sarajevo, Sarajevo, Bosnia and Herzegovina
[2]Clinic for Child Surgery, Clinical Center University of Sarajevo, Bosnia and Herzegovina
[3]Department of Pharmacology, The Faculty of Medicine, Sarajevo Medical School of the Sarajevo School of Science and Technology University, Sarajevo, Bosnia and Herzegovina
[4]Clinic for Radiology, Clinical Center University of Sarajevo, Bosnia and Herzegovina

Introduction: The aim of the paper is to show the spontaneous rupture of the stomach in a three- year- old girl. Rupture of the stomach can occur in conditions that lead to an increase in intra-abdominal or intragastric pressure. Cause can also be the thrombosis of the gastric coronary vein. **Patients and methods:** Article present case report that describe spontaneous rupture of the stomach in three year old girl. **Case Report:** Patient was admitted to the Pediatric Clinic due to poor general condition that occurred suddenly with severe abdominal pain, vomiting, development of hypovolemic shock. She was somnolent, heart rate was 164/ min, blood pressure was unmeasurable, VCP> 5 sec, distal part of the extremities were cold, acid-base balance: pH 7.1, pCO2 3.17 , p02 15.8, HCO3 8.8, BE -17.5, Na 121, K 6.1, lac 5.45. After the ultrasound and abdominal X-ray she was operated by the pediatric surgeon within 6 hours of admission. During surgery, multiple defects of stomach mucosa with transmural bleeding without pathohistological changes in the muscle layer were found in the large stomach blood vessels. Treatment was continued in Pediatric Intensive care unit with the development of life-limiting complications: peritonitis, sepsis, intracranial hemorrhage and outcome of

gne razvoj životno limitirajućih komplikacija koje dovode do smrtnog ishoda.

Kl jučne riječi: ruptura želudca, akutna distenzija, fatalni ishod.

death. **Conclusion:** Rupture of the stomach caused by acute distension is rarely seen in children outside the neonatal period. It has a fast clinical course and a high mortality rate. Early diagnosis and rapid surgical procedures are a prerequisite to avoid the development of life-limiting complications that lead to fatal outcome.

Key words: stomach rupture, acute distension, fatal outcome.

DEMOGRAFSKE KARAKTERISTIKE DJECE SA PREKOMJERNOM TJELESNOM MASOM

Feukić Azra
Spahić Razija, Numanović Amela
JZU UKC Tuzla, Klinika za dječije bolesti Tuzla, Tuzla, Bosna i Hercegovina

Cilj: Istraživanje je rađeno s ciljem da se proci jene demografske karakteristike djece sa PTM školskog uzrasta na području općine Tuzla. **Ispitanici i metode:** Studijom presjeka ispitano je 921 djete u dobi od 5 do 18 godina, iz 5 škola sa područja općine Tuzla, oba spola, te njihovi roditelji. U odnosu na vr ijednosti indeksa tjelesne mase ispitanici su podijeljeni prema kriterijima International Obesity Taskforce u dvije grupe: prekomjerno uhranjeni i gojazni. U odnosu na dob is pitanici su podjeljeni u tri dobne skupine: od 5. do 7. godine, od 8. do 12. godine i od 13. do 18. godine. Na osnovu SES porodice su svrstane u tri socijalne kategorije (niska, srednja i visoka). **Rezultati:** Od ukupno 921 ispitanog djeteta normalno je uhranjeno 632 (6 8,62%), pothranjeno 44 (4,79%), sa PTM 245 (26,59%), od čega je 177 (19,21%) prekomjerno uhranjeno dok je 68 (7,38%) gojazno. Od ukupno 245 ispitanika sa PTM njih 111

DEMOGRAPHIC CHARACTERISTICS OF CHILDREN WITH EXCESSIVE BODY WEIGHT

Azra Feukić, Razija Spahić, Amela Numanović
Clinic for Children's Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Objective: The research was carried out to as sess the demographic characteristics of school children with overweight in the municipality of Tuzla. **Participants and Methods:** A study of 921 children aged 5 to 18 years, from 5 schools in the municipality of Tuzla, both sexes, and their parents, were examined on the cross section study based on a multi-point random sample. Based on the bo dy mass index, respondents were divided according to the criteria of the International Obesity Task Force in two groups: overweight an d obese. In relation to age, respondents were divided into three age groups: from 5 to 7, from 8 to 12 year and from the age of 13 to 18. Based on socioeconomic status, families are classified into three social categories (low, medium and high). **Results:** Out of 921 childr en examined, 632 (68.62%) were normal weight, 44 (4.79%) were malnourished, excessive body weight had 245 (26.59%) children, out of which 177 (19.21%) were overweight

(45,3%) je bilo muškog, a 134 (54,7%) ženskog spola. Od toga 156 (63,7 %) je bilo iz grada, a 89 (36,3%) sa sela. Najviše ispitanika je poticalo iz porodica sa srednjim SES 46,1%, zatim niskim 34,3% a najmanje iz porodica sa visokim SES porodice 19,6%. Najviše djece sa PTM pripadalo je dobnoj skupini od 8 do 12 godina, njih 147 (60%) od čega je 85 bilo ženskog a 62 je bilo muškog spola. Učestalost PTM kod jednog ili kod oba roditelja je iznosila 91%. **Zaključak:** Rezultati istraživanja pokazuju da više od četvrtine djece školskog uzrasta na području općine Tuzla ima PTM. Veća učestalost PTM je bila u djece koja potiču iz porodica sa srednjim SES, gdje su prije svega rizične djevojčice, u gradskoj sredini i gojaznih roditelja. Stoga prevencija i inicijativa za liječenje PTM se ne može prepustiti samo roditeljima, nego se multidisciplinarno trebaju uključiti osim porodica svi nivoi obrazovnog i zdravstvenog sistema.

Skraćenice: PTM-prekomjerna tjelesna masa, SES-socioekonomski status

Ključne riječi: prekomjerna tjelesna masa, djeca, demografija.

and 68 (7.38%) were obese. Out of 245 respondents with excessive body weight 111 (45.3%) were male and 134 (54.7%) were female. Also, 156 (63.7%) were from the city, and 89 (36.3%) from the village. Most respondents were from families with medium socioeconomic status (46.1%), low 34.3% and the least from families with high income families (19.6%). The majority of children with excessive body weight belonged to the age group of 8 to 12 years, 147 or 60%, out of which 85 were female and 62 were male. The frequency of excessive body weight in one or both parents of children with excessive body weight was 91%. **Conclusion:** The results of the survey show that more than a quarter of school-age children in the municipality of Tuzla have excessive body weight. The higher incidence of excessive body weight was in children originating from families with medium socioeconimic status, where girls living in city with obese parent. Therefore, prevention and initiatives for the treatment of excessive body weight can not be left to parents only, but in addition to families, all levels of the education and health system should be included in multidisciplinary manner.

Keywords: overweight, children,demography.

TUMORI SREDIŠNJEG ŽIVČANOG SUSTVA KOD DJECE PRIKAZ SLUČAJA

Emira Gasal-Gvozdenović[1], Emina Karačić [1], Bekir Karčić[2]
[1]Kantonalna bolnica Zenica,
[2]Opća bolnica "Abdulah Nakaš"

Tumori središnjeg živčanog sustava su najčešći solidni tumori u dječijoj dobi i po učestalosti se nalaze odmah iza leukemija i čine 15% svih malignoma ove dobne skupine. 15 do 20% svih intrakranijlnih tumora javlja se kod djece mlađe od 15 godina. Večina tumo-

TUMORS OF CENTRAL NERVOUS SYSTEM IN CHILDREN CASE REPORT

Emira Gasal-Gvozdenović[1], Emina Karčić[1], Bekir Karčić[2]
[1]Cantonal Hospital Zenica, Zenica, Bosnia and Herzegovina
[2]General Hospital"Abdulah Nakaš", Sarajevo, Bosnia and Herzegovina

Central nervous system tumors are the most common tumors in the childhood and are commonly found behind leukemia and make up 15% of all malignancies of this age group. 15 to 20%

ra mozga pedijatrijske populacije su primarne neoplazme, metastaze su izrazito rijetke. **Prikaz slučaja:** Naš bolesnik je djevojčica koja se u dobi od 2 godine i 9 mjeseci prvi put javlja u Neuropedijatrijsko savjetovalište zbog patološkog hoda, tremora. Iz anamneze saznajemo da je razvoj hoda tekao uredno do druge godine života.Roditelji navode niz padova koji su shvaćeni kao uzrok poremećaja hoda, a „drhtanje"- strah od pada.Upućena je ortopedu, počela je da nosi uloške,potom su ordinirani vitamini za „jačanje" Na pregledu dominira ataksija, traži pomoć pri hodu, diskretan tremor na gornjim i donjim ektremitetima, konvergentni strabizam, lijevo blaga protruzija bulbusa, dominira i makrokranija. Urađen je hitni MRI i MRA kranijuma koji ukaže na infiltrativnu i ekspanzivnu lezija moždanog stabla koja karakteristikama odgovara low grade gliomu, sa pretećim internim hidrocefalusom. Oftalmološki pregled evidentira konvergentni strabizam lijevog oka i edem papile optičkog nerva. Po postavljanju dijagnoze implantirana je ventrikuloperitonealna valvula desno , proveden je iradijacijski tretman nakon čega se evidentira poboljšanje u kliničkoj slici, hod i dalje nesiguran, ali hoda samostalno. U više navrata rađen je kontrolni MRI kranijuma koji nakon godinu dana ukaže na porast ranije evidentirane ekspanzivne lezije.U daljem periodu prisutno je rapidno pogoršanje neurološkog statusa (koma, konvulzije), repiratorna insuficijencija. Exitus letalis je nastupio 2 godine i 2 mjeseca nakon postavljanja dijagnoze. **Zaključak:** Prikazom slučaja želimo naglasiti bitnost redovnog praćenja motornog razvoja djece, poznavanje patoloških obrazaca,formiranje neurorazvojih savjetovlišta.Terapijske mogućnosti liječenja neoplazmi središnjeg živčanog sustava su vrlo ograničene, ali ipak rana dijagnostika i mogućnost operativnog zahvata dalju povećanu šansu za preživljavanje

Ključne riječi: dijete, tumor, hidrocefalus, tretman,

of all intracranial tumors occur in children under the age of 15. Most brain tumors of the pediatric population are primary neoplasm, metastases are extremely rare. **Case report:** Our patient is 2 years and 9 months old girl who was admitted for the first time in the Neuropediatrics Counseling Center because of pathological walking, tremor. We found out, from heteroanamnesis, that the development of the walkway had been developing normally until the age of 2. The parents cited a number of falls that are perceived as a cause of the disorder walking, and "trembling" - fear of falling. She was examined by orthopedists and started to wear the orthopedic inserts, and she was treated with the vitamins for "strengthening". By physical examination, we found out ataxia, discrete tremor on the upper and lower extremities, convergent strabismus, left mild bulb protrusion, macrocranium. An urgent MRI and MRA have been done and they pointed to an infiltrative and expansional cerebral lesion that responds to low-grade glioma, with predominant internal hydrocephalus. The ophthalmic examination records the convergent strabismus of the left eye and the edema of the optic nerve. After the diagnosis has been made, the ventricular peritoneal valve was implanted to the right; an irradiation treatment was performed after which the patient was better for a short time. A control MRI of cranium has been done several times and showed an increase in the previously recorded expansional lesion. In the later period there was a rapid deterioration of neurological status (coma, convulsion), reperfusion insufficiency and general condition of the child. Exitus letalis was performed 2 years and 2 months after the diagnosis. **Conclusion:** With this case report we want to emphasize the importance of regular monitoring of motor development, especially of children in their young age. Therapeutic options for treatment of neoplasm of the central nervous system in children are very limited, but early diagnosis and the possibility of surgery increase the chance to survive.

Key words: tumors, hydrocephalus, treatment, irradiation, children

ZNAČAJ ULTRAZVUKA MOZGA U DIJAGNOSTICI INTRAKRANIJALNIH TUMORA

Orhana Grahić-Mujčinović
Aida Mustajbegović-Pripoljac, Edina Muratović
JU Kantonalna bolnica Zenica

Cilj: Ultrazvuk mozga je jednostavna neinvazivna slikovna metoda pregleda glave novorođenčadi i dojenčadi i široko se koristi u dijagnostici kongenitalnih anomalija mozga, krvarenja i hipoksičnih lezija. U otkrivanju drugih rjeđih patoloških stanja, na primjer tumora mozga, ultrazvuk se kao dijagnostička metoda ne pominje toliko često, ali njegov značaj nije zanemariv. **Metode:** Prikazaćemo dva slučaja intrakranijalnih tumorskih lezija dijagnosticiranih ultrazvučno i komparirati sa MRI nalazima. **Rezultati:** Prvi slučaj je dojenče u dobi 2,5 mjeseca hospitalizirano zbog konvulzija, ultrazvučno postavljena sumnja na periventrikularnu neuronalnu heterotopiju za koju se potvrdi sa MRI da se radi o tuberoznoj sklerozi. Drugi slučaj je neonatus kome je zbog težeg poroda indiciran ultrazvučni pregled na kome se uoči ehogena anomalija u podu srednje lobanjske jame, MRI obradom dokaže se ekspanzivna lezija koja se kasnije patohistološki definira kao primitivni neuroektodermalni tumor. **Zaključak:** Kod novorođenčadi i dojenčadi koja se prezentuju određenom neurološkom simptomatologijom, ultrazvuk mozga može biti korisna jednostavna skrining dijagnostička metoda, osobito za diferenciranje stepena hitnosti za dalju obradu u smislu CT ili MRI pregleda.

Ključne riječi: novorođenče, dojenče, ultrazvuk, tumor mozga

SIGNIFICANCE OF ULTRASOUND IN THE DIAGNOSIS OF INTRACRANIAL BRAIN TUMOR

Orhana Grahić-Mujčinović,
Aida Mustajbegović-Pripoljac, Edina Muratović
Public Institute Cantonal Hospital Zenica

Goal of the study: An ultrasound scan of a brain is a simple, non-invasive approach of analyzing the head of newborn and infant. The method is widely used for diagnosing congenital anomalies of the brain, bleeding and hypoxic lesions. In the detection of other rare pathological conditions, such as a brain tumor, ultrasound as a diagnostic method is not mentioned as often, however, it is important to acknowledge its significance is not irrelevant. **Method:** We will present two cases of intracranial tumor lesions—both were diagnosed using ultrasound scan method, and the findings will be compared with MRI scans. **Results:** The first case is a 2.5 months old infant hospitalized with seizures, where examination of a baby head via ultrasound scan method indicated possible periventricular neuronal heterotopia, in which case MRI scan confirmed tuberous sclerosis. The second case is a newborn infant, where ultrasound scan of a baby head had to be conducted due to severe labor complications. The ultrasound examination lead to detection of echogenic anomaly in the floor of the middle cranial fossa, MRI discovered an expansive lesion, later defined as a primitive neuroectodermal tumor. **Conclusion:** Cranial sonography can be very helpful as a screening diagnostic tool for the evaluation of infants presented with a specific neurological symptoms, in particular to differentiate the degree of urgency for further elaboration and processing in the sense of a CT or MRI scan.

Key words: newborn, infant, ultrasound, brain tumor

SITUS VISCERUM INVERSUS TOTALIS- PRIKAZ SLUČAJA

Azra Hadžić - Kečalović[1], Semra Pajazetović[2], Jasmina Osmančević - Muminović[3]
[1]Kantonalna bolnica Dr.Irfan Ljubijankić , Odsjek neonatologije , Bihać
[2]Dom zdravlja Velika Kladuša, Dispanzer za zdravstvenu zaštitu djece, Velika Kladuša
[3]Dom zdravlja Cazin, Dispanzer za zdravstvenu zaštitu djece, Cazin

Uvod: Situs inversus je stanje u kojem je raspored unutarnjih organa ogledalna slika normalne anatomije. Oko 15-25 % osoba sa situs inversus ima poremećaj poznat kao primarna cilijarna diskinezija. **Materijal i metode rada:** Prikazali smo slučaj 13-godišnjeg dječaka sa recidivirajućim glavoboljama, sinusitisima i učestalim respiratornim infekcijama. Po rođenju liječen kao desnostrana aspiraciona pneumonija, kasnije je liječen antibioticima, sekretoliticima i inhalacionim kortikosteroidima, sa slabim terapijskim odgovorom. Fizikalno: Dječak je primjerene osteomuskularne građe. Auskultatorno na srcu ritmična akcija, srčani tonovi jasniji uz desni parasternalni rub, bez šuma. Ostali fizikalni nalaz uredan. Laboratorijski nalazi su uredni za dob. Radiogram grudnog koša i ultrasonografija abdomena ukažu na totalni inversus visceralnih organa. **Diskusija:** Situs inversus totalis ima incidencu od 0,01 % u opštoj populaciji, sa Kartagenerovim sindromom kod 15 - 25 % oboljelih. Situs inversus sa dekstrokardijom predstavljao gledalnu sliku uobičajenog anatomskog rasporeda. Lijevo plućno krilo ima tri lobusa a desno dva. Želudac i slezena su na desnoj strani, a jetra i žučni mjehur na lijevoj. Krvni sudovi, nervi, limfni vodovi i crijeva također imaju obrnut smještaj. U slučaju izoliranog inversusa, liječenje je simptomatsko i suportivno. Hirurški tretman provodi se kod pridruženih abnormalnosti , kao što su urođene srčane mane. Menadžment pacijenata sa Kartagenerovim sindromom uključuje prevenciju respiratornih infekcija, posturalnu drenažu, liječenje bakte-

SITUS VISCERUM INVERSUS TOTALIS - CASE REPORT

Azra Hadžić-Kečalović[1], Semra Pajazetović[2], Jasmina Osmančević - Muminović[3]
[1]Cantonal Hospital Dr.Irfan Ljubijankić, Department for Neonatology, Bihać, Bosnia and Herzegovina
[2]Health Center Velika Kladuša, Department for Health Care of Children, Velika Kladuša, Bosnia and Herzegovina
[3]Health Center Cazin, Department for Health Care of Children, Cazin, Bosnia and Herzegovina

Introduction: Situs inversus is a condition characterized by transposition of abdominal organs. 15-25% of patients with situs inversus are having a condition known as primary ciliary dyskinesia. **Patients and methods:** We are presenting a rare case of a 13-year- old boy with headaches, sinusitis and recurrent respiratory infections. As a neonate, he was treated because of aspiration pneumonia, later he was treated with antibiotics, secretolytics and inhalation corticosteroids, with poor results. Examination: the boy has average hight and weight for his age. Heart sounds are better heard on the right side of sternum, and no murmur is noticed, other physical finding is propper. Laboratory tests are in referal values. We have confirmed totally inversed abdominal viscera by performing chest x ray and abdominal ultrasound. **Discussion:** There is 0.01% incidence of situs inversus totalis in general population, and 15-25 % of patients also have Kartagener sydrome. Situs inversus with dextrocardia is characterized by mirror image reversal of the organs in the chest and abdominal cavity. Left lung has three lobes, and right lung has two lobes. Stomach and spleen are positioned on the right side, liver and gall bladder are on the left side. Blood and lymph vessels, nervs and intenstines can also have reversed position. In case of isolated inversus, the treatment is symptomatic and supportive. Surgical treatment is provided in case of associated anomalies, such as congenital heart defects. The

rijskih infekcija... Prema radovima Bohuna i ostalih, osobe sa dekstrokardijom i izoliranim situsom, bez pridruženih anomalija, imaju istu očekivanu životnu dob kao u opštoj populaciji **Zaključak:** Dekstrokardija sa situs viscerum inversus totalis je rijedak klinički entitet, koji se otkrije u različitoj životnoj dobi, ovisno o simptomatologiji i pridruženim abnormalnostima. Važno je rano prepoznavanje ovog stanja, zbog pravovremenog i adekvatnog liječenja.

Ključne riječi: dektrokardija, situs viscerum inversus totalis

management of patients with Kartagener syndrome includes respiratory infections prevetion, postural drainage, treatment of bacterial infections, etc. According to Bohun and others , patients with dextrocardia and isolated situs inversus, without associated anomalies have the same expected lifetime as healthy general population. **Conclusion:** Dextrocardia with situs viscerum inversus totalis is rare clinical entity, which can be recognized in different age, depending on clicinal picture and other abnormalities. It is important to recognize this condition as early as possible in order to decrease errors and prevent complications that arise from patients assessment, particulary in cases of surgical treatment.

Key words: dextrocardia, situs viscerum inversus totalis

PNEUMONIJA SA PRODUŽENIM TOKOM

Ediba Hadžimujić[1], Mrkonjić Almir[1], Mersiha Mujkić- Grabus[1], Subha Agić Habib[1], Indira Zukić [2]
[1]JU Bolnica Travnik, [2]Kantonalna Bolnica Zenica
Bosna i Hercegovina

Uzročnici pneumonije u 85 % slučajeva su bakterije i virusi. Nekomplicirana bakterijska pneumonija obično dobro reaguje na terapiju , a simptomi se povlače 48- 96 sati nakon aplikacije antibiotika. Poboljšanje treba potvrditi radiološki tokom 4-6 sedmica.Pneumonije sa produženim tokom podrazumjevaju neočekivano dugo prisustvno simptoma ili radioloških promjena. Tok bolesti varira zavisno od odbrane organizma rasprostranjenosti bolesti ,prisustva komplikacija. **Cilj rada:** Prikazati razvoj kliničke slike pneumonije sa produženim tokom. Dječak u dobi od 3 g premjesten u našu ustanovu nakon hospitalizacije u regionalnoj zdravstvenoj ustanovi Dg: Bron-

SLOWLY RESOLVING PNEUMONIA

Ediba Hadžimujic[1], Almir Mrkonjic[1], Mersiha Mujkic-Grabus[1], Subha Agic Habib[1], Indira Zukic[2]
[1]Public Institute Hospital Travnik, Travnik, Bosnia and Herzegovina
[2]Cantonal Hospital Zenica, Zenica, Bosnia and Herzegovina

Causes of pneumonia in 85% of cases are bacteria and viruses. Uncompleted bacterial pneumonia usually responds well to therapy, and symptoms are with drown in 48-96 hours after application of antibiotics. The improvement should be confirmed radiologically in 4-6 weeks. Slowly resolving pneumonia implicate an unexpectedly long presence of symptoms or neurological changes. The course of the disease varies depending on the defense of the disease's prevalence of the disease or presence of complications. **The aim** of the report is to warn about the importance of the possible need for long-term use of antibiot-

c honeumonia l. dex. Ordinirna antibiotska terapija (Ampicillin , Ceftriakson). Po prijemu i realizaciji laboratorijsko dijagnostičkih pretraga (CRP 250 mg/l, Le 33.1 , RTG pulmo: konsolidacija plućnog tkiva desno sa vazdušnim bronhogramom, dif. dg pneumonija, dis akteletaza) nastavimo terapiju: Ampicilin, Ceftriakson. Trećeg dana hospitalizacije, visoko febrilan zbog čega se četvrtog dana terapiji doda trimetroprim sulfmetoksazol.Narednog dana dječak afebrilan, dobrog opšteg stanja, auskultatorni nalaz u regresji. RTG pulmo dobra regresija ranije opisanih promjena koja još nije potpun CRP 135mg/l, Le 26.8 . Osmog dana liječenja ponovno febricira uz progresiju kašlja i pogoršanje opšteg stanja (CRP 41, Le 18.2). Pristigli nalazi: hemokultura sterilna, kulturom sputuma patogene bakterije nisu nađene kao ni gljivice. U terapiju se uključi Vankomicin. Obzirom na produžen tok bolesti, konsulitran pulmolog po čijoj preporuci se nastavi terapija. Sedamnaestog dana liječenja, dječak afebrilan, CRP 3, Le 8.2 . Ponovno konsultiran pulmolog koji konstatuje veoma dobra regresija procesa na kontrolnom rentgenogramu te se dječak otpusti na kućno liječenje dvadeset četvrotg dana liječenja (Le 8.2, Gr 58.6 %, CRP 3.0 mg/l) uz terapiju. Sedmog dana po otpustu, na kontrolnom pregledu, dječak ponovno febrilan, zbog čega se realizira kontrolni rentgenogram koji pokaže konsolidaciju tkiva u istoj regiji kao i na početku bolesti zbog čega se indicira premještaj na odjel pulmologije Pedijatrijske klinike UKC Sarajevo gdje je dječak liječen antibiotskom terapijom Vankomicina narednih 16 dana. Tokom liječenja na odjelu pulmologije realizira se ehografija abdomena i pluća koji su bili uredni kao i ponovljene kulture sputuma (na bakterije, gljivice, acido rezistentni bacil). Nakon približno 50 dana od početka simptoma, pacijent je otpušten kao izliječen. **Zaključak:** Pacijent sa pneumonijom produženog toka zahtjeva multidisciplinarni pristup zbog mogućnosti ne bakterijske etiologije, te kongenitalne ili

ics during treatment, even in cases of uncomplicated pneumonia. A male child, at age of 3, with Dg. Bronchopneumonia l. dex , was transferred to our facility after hospitalization at the regional health institution where he was treated with antibiotic therapy (Ampicillin, Ceftriaxone). After admission and implementation of diagnostic procedures, we continue with same therapy (CRP 250 mg/l, WBC 33.1 , Radiologic findings on chest X-ray at admission: consolidation of the lung tissue to the right with an air bronchogram, differential diagnosis : pneumonia, dysatelectasis). 3rd day of hospitalization, boy was high febrile and to therapy trimethoprim sulfomethoxazole was added. From 4th day, boy was in good general condition, afebrile, laboratory findings in regression (CRP 135mg / l, WBC 26.8) as well as auscultation findings. At control chest X ray : good regression of previously described changes that is not yet complete. 8th day of hospitalization, deterioration of the general condition, boy was febrile again with progression of cough. Performed control laboratory findings in regression (CRP 41, WBS 18.2). Hemoculture sterile. Pathogenic bacteria in sputum cultures were not found either as fungies. Because of prolonged clinical symptoms in treatment we include Vancomycin. On the 17th day of hospitalization, we consulted pulmonologist. Patient was afebrile, at good condition, laboratory findings in regression (CRP 3, WBC 8.2 , Chest X-rays: Very good regression of the process according to pulmonologist). Recommendation for further therapy was Ospen syrup. Patient was released from hospital at the 24th day of treatment with normal blood count and CRP (WBS 8.2, Neu 58.6 %, CRP 3.0 mg / l). At control examination 7 day after release, patient was febrile again. Controlled X ray shows consolidation in same region as before and because of that patient is transferred to Pulmonology department in Pediatric clinic where he was treated with Vancomycin for another 16 days. During hospitalization in

stečene endobronhijalne opstrukciju , sto kod našeg pacijena nismo dokazali i dugotrajnu primjenu terapije uprkos urednim mikrobiološkim pretragama.

Ključne riječi: pneumonija sa produženim tokom

Sarajevo, performed ultrasonography of abdomen and chest were normal, as well as repeated sputum cultures (bacteria, fungi, ARB). After approximately 50 days from the start of symptoms, patient was dismissed from the hospital as healed. A patient with slowly resolving pneumonia requires a multidisciplinary approach because of the possibility non-bacterial etiology and congenital or acquired endobronchial obstruction, which in our patient has not been proven and long term antibiotic therapy despite normal microbiological findings

Key words: slowly resolving pneumonia

BCG VAKCINACIJA I MOGUĆE KOMPLIKACIJE- PRIKAZ SLUČAJA

Zlata Hajrić[1]
Selma Selimović[2], Amer Osmanović[3]
[1]Odjeljenje za dječije bolesti, Opća bolnica Tešanj, Bosna i Hercegovina
[2]Klinika za dječije bolesti, Univerzitetsko-klinički centar, Tuzla, Bosna i Hercegovina
[3]Centralna apoteka, Univerzitetsko-klinički centar, Tuzla, Bosna i Hercegovina

Uvod: Tuberkuloza je infekcija uzrokovana bakterijom Mycobacterium tuberculosis, koja najčešće zahvata pluća, ali može se javiti u bilo kom dijelu tijela. Prema Programu Svjetske zdravstvene organizacije za vakcinaciju (EPI) preporučuje se bacille Calmette-Guérin (BCG) vakcinacija u cilju zaštite hematogenog širenja primarne tuberkulozne infekcije među djecom. Rijetko, komplikacije BCG vakcinacije se dešavaju u 3,3% slučajeva sa manifestacijom 6-9 mjeseci nakon inokulacije. Osim limfadenitisa, koji je najčešća komplikacija, regionalni ili extraregionalno lokaliziran absces i osteomyelitis su rijetki, ali su ozbiljne komplikacije koje prate BCG vakcine. **Prikaz slučaja:** Opisana je djevojčica dobi 18 mjeseci

BCG VACCINATIONS AND POSSIBLE COMPLICATIONS – CASE REPORT

Zlata Hajrić[1]
Selma Selimović[2], Amer Osmanović[3]
[1]Children's Department, General Hospital Tešanj, Bosnia and Herzegovina
[2]Clinic for Children's disease, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina
[3]Central Pharmacy, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Introduction: Tuberculosis is an infection caused by the Mycobacterium tuberculosis bacteria which most commonly affects the lungs, but can involve any part of human body. The World Health Organization's Expanded Programme on Immunization (EPI) recommends the bacille Calmette-Guérin (BCG) vaccine for infants to protect against the haematogenous spread of primary TB and other more severe types of TB infection. Rarely, complications from BCG vaccination arise among 3.3% of cases and manifest around 6–9 months after inoculation. Besides lymphadenitis, which is the most common complication, regional or extraregional localised abscesses and osteomyelitis are uncommon

sa simptomatskim šepanjem lijeve noge i kratkotrajno povišenom tjelesnom temperaturom. U početku bolesti ortopedski praćena, isključena mogućnost reumatoloških promjena na zglobovima, data antibiotska terapija. Nakon terapije, perzistirala je povišena sedimentacija eritrocita, potom se pojavila jasno ograničena tumefakcija u predjelu lijevog skočnog zgloba, bez promjene boje kože. Svi pokreti u zglobovima uredni. RTG snimak lijevog skočnog zgloba pokaže destrukciju kosti u distalnom dijelu tibije. Urađena je extirpacija i kiretaža navedene promjene, histopatološki dokazan kazeozni granulomatozni osteomyelitis, obzirom na dob i nalaz biopsije radilo se o BCG osteomyelitisu, a ne klasičnom tuberkuloznom osteomyelitisu. Isključena je mogućnost prisustva promjena na plućima i mozgu, bez imunodeficijencije. Redovno vakcinisana, naveden je podatak o prisustvu aksilarnog limfadenitisa lijevo nakon vakcinacije BCG, koji se postepeno povećavao, u dobi od 3 mjeseca prvi put pregledana od strane dječijeg hirurga, potom zbog abscesa navedene promjene rađena incizija u dobi od 7 mjeseci. Uključena ATL terapija ukupno 12 mjeseci, prvo trojna (Izoniazid, Rifampicin, Pyrazinamid) u trajanju od 4 mjeseca, potom dvojna (Izoniazid, Rifampicin) još 8 mjeseci. Nakon sprovedene terapije, promjena na kosti u potpunosti osificirala. **Zaključak:** Čak i kad nema znatno izraženih simptoma treba posumjati na BCG osteomyelitis i proširiti dijagnostičku obradu, pogotovo kod djece sa šepanjem nakon BCG vakcinacije i podatka o prethodno prisutnom limfadenitisu.

Ključne riječi: BCG vakcinacija, komplikacije, tuberkuloza, osteomyelitis, lymphadenitis

but serious complications following the BCG vaccine. **Case report:** We have described 18-months old girl with symptomatic left leg limp and short-term elevated body temperature. At the beginning, she was followed by the orthopedist, possibility of rheumatic changes on the joints was excluded and antibiotic therapy was started. After therapy, elevated erythrocyte sedimentation rate persisted, afterwards appeared clearly limited tumefaction in left ankle area, without changing the skin color. All joint movements were normal. Left ankle X-ray showed bone destruction in distal part of tibia. The extirpation and curretage of the above mentioned change was done, histopathologically was proven caseose granulomatous osteomyelitis, which, with regard to the age and biopsy findings, would indicate spread of inflammation from the BCG osteomyelitis, not classic tuberculous osteomyelitis. It was excluded possibility of lung and brain infection, without immunedeficiency. She was regularly vaccinated and revealed data of left axillary lymphadenitis presence after the BCG vaccination, which was gradually increased in time. Therefore, she was examined for the first time at age of 3 months by pediatric surgeon and due to the occurrence of abscess of the mentioned change had an incision at the age of 7 months. It was included antituberculotic therapy total of 12 months, first triple medications (Izoniazid, Rifampicin, Pyrazinamid) lasting for 4 months, then double (Izoniazid, Rifampicin) for 8 months. After the therapy was carried out, the change in the bone was fully established. **Conclusion:** Even thought symptoms were not significantly expressed, there should be kept in mind of BCG osteomyelitis and expand diagnostic processing when assessing a child presenting with a limp after BCG vaccination and previously presented lymphadenitis.

Key words: BCG vaccination, complications, tuberculosis, osteomyelitis, lymphadenitis

PRIMARNI TUMOR KIČMENE MOŽDINE U SEDMOGODIŠNJEG DJEČAKA

Maida Jahić[1], Belkisa Čolić-Hadžić[1], Svjetlana Mujagić[2], Aida Mršić[1]
[1]Univerzitetski klinički centar, Klinika za dječije bolesti, Tuzla, [2]Klinika za radiologiju i nuklearnu medicinu, Tuzla, Bosna i Hercegovina

Uvod: Primarni spinalni tumori su vrlo rijetke neoplazme centralnog nervnog sistema u dječijoj dobi. Dijele se prema lokalizaciji na ekstraduralne, intraduralne-ekstramedularne i intramedularne spinalne tumore. Od intramedularnih su najčešći astrocitomi i ependimomi. Najčešći klinički simptomi i znaci su bol u leđima, spazam paraspinalnih mišića, spinalne deformacije (naročito progresivne skolioze), poremećaji hoda, mišićna slabost ekstremiteta, promjene refleksa, senzorna oštećenja, disfunkcije sfinktera. Dva najznačajnija prognostička prediktora su histološki stepen tumora i preoperativni neurološki status. **Prikaz slučaja:** Sedmogodišnji dječak je primljen u našu kliniku zbog iznenadnog tortikolisa, skoliotičnog držanja torakolumbalne kičme zadnja tri mjeseca, recidivirajućih abdominalnih bolova i obstipacije posljednjih godinu dana. Fizikalnim pregledom nije se mogao izvesti test pretklona (Adamsov test) zbog spazma paraspinalne muskulature. Tetivno-kutani abdominalni i mišićno tetivni refleksi na donjim ekstremitetima bili su lako oslabljeni. Na standardnoj radiografiji kičmenog stuba je opisana sinistrokonveksna skolioza lumbalne kičme. Magnetna rezonanca torakolumbosakralne kičme sa kontrastom je pokazala intramedularnu, jasno ograničenu ekspanzivnu leziju torakalnog segmenta VII-XI koja zauzima čitav poprečni presjek sa posljedičnom siringohidromijelijom kičmene moždine kaudo-i kranijalno od lezije. Indicirano je operativno liječenje od strane neurohirurga a patohistološka analiza je potvrdila dijagnozu pilocitičnog astrocitoma gradus I. Kontrolni MR postoperativno i nakon šest mjeseci pokazao je značajnu regresiju tumor-

PRIMARY SPINAL CORD TUMOR IN A SEVEN-YEAR-OLD BOY

Maida Jahić[1], Belkisa Čolić Hadžić[1], Svjetlana Mujagić[2], Aida Mršić[1]
[1]Clinic for Children's Diseases,University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina
[2]Clinic for Radiology and Nuclear Medicine, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Introduction: Primary spinal cord tumors are very rare neoplasms of the central nervous system in childhood. Depending on their location, spinal cord tumors may be classified as extradural, intradural-extramedullary and intramedullary tumors. The most common of the intramedullary tumors are astrocytomas and ependymomas. The most common clinical symptoms and signs are back pain, spasm of paraspinal muscles, spinal deformities (especially progressive scoliosis), gait disturbance, muscle weakness of extremities, changes reflexes, sensory disturbances, sphincter dysfunctions. The two most significant predictors of outcome are histological grade of the tumor and the pre-operative neurological status.**Case report:** A 7-year-old boy was admitted to our clinic with a sudden torticollis, scoliotic posture of the thoracolumbal spine for three months, with one-year history of recurrent abdominal pains and constipation. On physical examination a boy could not bend forward (Adam's forward bend test) due to the spasm of paraspinal musculature. The skin abdominal and muscular-tetive reflexes on lower extremities were easily weakened. Standard radiography of the spine showed the lumbar scoliosis sinistroconvexa. Magnetic resonance imaging thoracolumbosacral spine with contrast revealed an intramedullary, clearly limited expansive lesion of the thoracic segment VII-XI which occupies a whole cross section with the consequent syringomyelia of spinal cord caudal and cranial to the lesion. Neurosurgeon indicated operative treatment and pathohistological analysis confirmed the diagnosis astrocytomas pilocytic gradus I. Control MR postopera-

ske lezije bez neurološkog deficita u dječaka. **Zaključak:** Tortikolis je nespecifičan klinički znak sa širokim spektrom patofizioloških zbivanja i uvijek zahtijeva pažljiv pregled i evaluaciju. Juvenilne progresivne skolioze uz neurološki deficit uvijek indiciraju magnetnu rezonancu. Tupa bol u leđima je vodeća klinička simptomatologija spinalnih tumora koja se pogoršava noću a u mlađe djece se često prezentuje abdominalnom boli kao u našeg dječaka. Ovim prikazom smo ukazali i na značajnost testa pretklona. Spinalni tumori su veoma izazovno područje zbog niske incidence i potrebe za ranom dijagnozom i terapijskim postupcima.

Ključne riječi: spinalni tumori, dječija dob, tortikolis, juvenilna skolioza

tively and after six months showed significant regression of tumor lesion without neurological deficit of the boy. **Conclusion:** Torticollis is a non-specific clinical sign with a wide spectrum of pathophysiological events and always requires careful examination and evaluation. Juvenile progressive scoliosis with neurological deficit always indicate magnetic resonance. Back pain is the leading clinical symptomatology of spinal tumors that gets worse at night, and in younger children is often presented with abdominal pain as with our boy. This presentation also showed the significance of the test bent. Spinal tumors are very challenging areas due to low incidence and need for early diagnosis and therapeutic procedures.

Key words: spinal tumor, pediatric age, torticollis, juvenile scoliosis

NOVOROĐENAČKA TROMBOCITOPENIJA I RIZIČNI ČIMBENICI

Marjana Jerković Raguž[1], Jerko Brzica[2]
1. Klinika za dječje bolesti Sveučilišne kliničke bolnice Mostar
2. Klinika za dječje bolesti Sveučilišne kliničke bolnice Mostar

Cilj: Istražiti učestalost trombocitopenije u novorođenčadi i utvrditi povezanost trombocitopenije s rizičnim čimbenicima. **Materijal i metode:** Trombocitopenija novorođenčadi definira se brojem trombocita ispod 150 x/L, podjednako u prijevremeno rođene i terminske novorođenčadi. Studija je obuhvatila 136 novorođenčadi sa nalazom trombocitopenije,a koja su liječena na Odjelu neonatalne intenzivne njege (NICU) u Klinici za dječje bolesti Mostar. Podatci o trudnicama i novorođenčadi su prikupljeni iz povijesti bolesti i protokola liječenja novorođenčeta tijekom hospitalizacije. Za testiranje statističke signifikantnosti je korišten test i Fisherov egzak-

TITLE: NEONATAL THROMBOCYTOPENIA AND RISK FACTORS

Marjana Jerković Raguž[1], Jerko Brzica[2]
[1]Clinic for Children's Diseases, University Clinical Hospital Mostar, Mostar, Bosnia and Herzegovina
[2] Clinic for Children's Diseases, University Clinical Hospital Mostar, Mostar, Bosnia and Herzegovina

Objective: To research the occurrence of thrombocytopenia in the newborn and to establish the connection of thrombocytopenia with risk factors. **Materials and methods:** The study encompassed 136 newborn, to whom thrombocytopenia diagnosis was confirmed in laboratory test, and who were treated at the Neonatal Intensive Care Unit (NICU) at the Clinic for Children's Diseases at the University Clinical Hospital in Mostar (SKB) in Mostar. Thrombocytopenia newborns defined platelet counts below 150 x/L, both in preterm and term newborns. Data on pregnant women and newborns were collected from the history of the disease and the protocol for the

tni test. **Rezultati:** Od ukupno 1164 novorođenčadi koja su liječena u NICU tijekom dvogodišnjeg radoblja 2013.-2014.g u SKB Mostar, 136 (11,7 %) novorođenčadi je imalo trombocitopeniju. Od ukupnog broja djece sa trombocitopenijom, njih 37 (27%) je bilo nedonoščadi, a 99 (73 %) je bilo terminske djece. Rizični čimbenici od strane majke koji su utjecali na nastanak trombocitopenije su uzimanje lijekova 53,7 %, konzumiranje cigareta 56,6 % i komplikacije pri porodu 34,6 %. Insuficijenciju placente je imalo 32,4 % novorođenčadi. Od ukupnog broja novorođenčadi s trombrocitopenijom, 38,2 % imalo je neku vrstu infekcije (sepsa,infekcija urinarnog trakta, bakterijemija), što je jedan od glavnih rizičnih čimbenika od strane novorođenčeta za nastanak trombocitopenije. Najčešči izolirani uzročnik infekcije bila je Escherichia coli, koja je izolirana u 19,9 % ispitanika. **Zaključak:** Ovo istraživanje pokazuje da su najvažniji rizični čimbenici, za nastanak novorođenačke trombocitopenije na NICU rizični čimbenici od strane majke. Potrebna je bolja prenatalna i antenatalna prevencija rizičnih čimbenika u trudnica. Osim toga posebna pozornost treba biti posvećena ranom otkrivanju trombocitopenije u novorođenčadi hospitalizirane na NICU jer se time može spriječiti razvoj teške infekcije, a ujedno prevenirati visoka smrtnost rizične skupine novorođenčadi.

Ključne riječi: trombocitopenija, trudnoća, novorođenče.

treatment of newborns during hospitalization. For the test of statistical significance, the x ^ 2 test and Fisher's exact test were used. **Results:** Out of the total number of 1164 newborn who were treated at the NICU during a two year period, 2013/2014, at the University Clinical Hospital in Mostar, 136 (11.7 %) newborn had thrombocytopenia. Of the total number of children with thrombocytopenia, 37 (27%) were premature births, and 99 (73%) were term children.Risk factors from mother's side that affected development of thrombocytopenia were medications 53.7%, cigarettes consumption 56.6 % and complications at delivery 34.6 %. Placental insufficiency occurred in 32.4 % newborn. Out of the total number of the newborn with thrombocytopenia, 38.2 % suffered from some kind of infection (sepsis, urinary system infection, bacteriemia...), which is one of the main risk factors for development of thrombocytopenia on the side of the newborn. The most frequently isolated cause was Escherichia coli, which was isolated in 19.9 % examinees. **Conclusion:** This study shows that the most important risk factors for development of thrombocytopenia in the newborn at the NICU are the risk factors on the side of the mother.

Key words: newborn, Thrombocytopenia, pregnancy

EDUKATIVNE AKTIVNOSTI, UTICAJ NA STAV RODITELJA PREMA VAKCINACIJI I PROCIJEPLJENOST DJECE

K. Jung-Čaušević[1], J. Durmišević-Serdarević [1], M. Zlatić[1], M. Gungor-Muminović[1]
Dom zdravlja Zenica[1]

Uvod: Aktivnosti edukativnih programa bi trebale utjecati na promijenu stava roditelja pa i zdravstvenih radnika o vakcinama i vakcinaciji. **Cilj:** Utvrditi koliko je prisutna pojava odbijanje vakcinacije djece u periodu 2016 godina u Zenici. Utvrditi efekat poduzetih mjera u promociji vakcinacije na ovu pojavu u odnosu na prethodni period 2014- 2015 god. **Metode:** Prikupljanje podataka o broju pismenih izjava roditelja da ne žele vakcinisti svoje dijete. Prikupljeni podaci o sprovedenim aktivnostima u promociji vakcinacije u sklopu službi Doma zdravlja. **Rezultat:** Ukupan broj dijece 2016 god u dobi do 7 godine u Zenici je 6174. U ispitivanom periodu je 58(0,7%) roditelj dao pismenu izjavu da ne želi vakcinisati svoje dijete. Najčešće su roditelji djece dobi do jedne godina odbijali vakcinaciju 29 (2,6%), a najrjeđe za djecu dobi 2-6 godina 15(0,3%) U 2016 godini smo sproveli brojne aktivnosti u promociji imunizacije. U četiri tematske tv emisije su gostovali pedijatri ili epidemiolozi, u tri novinska intrvjua također su epidemiolozi i pedijatri govorili o značaju i koristi vakcinacije. Organizovana su dva predavanja za zdravstvene radnike uposlenike Doma zdravlja na ovu temu kao i nekoliko stručnih sastanaka. U odnosu na period 2014- 2015 je nešto manji broj pismenih izjava 51(0,6), ali je primijetan trend povečanja odbijanja imunizacije u dobi do 1 god. **Zaključak:** Pojava odbijanja imunizacije djece je sve učestalija, a može značajno uticati na procjepljenost djece.

Ključne riječi: odbijanje vakcinacija, edukacija, procjepljenost,

EDUCATIONAL ACTIVITIES AND THEIR EFFECT ON PARENTAL ATTITUDES TOWARDS VACCINATIO AND OVERALL PERCENTAGE OF VACCINATED CHILDERN

K. Jung-Čaušević[1], J. Durmišević-Serdarević [1], M. Zlatić[1], M. Gungor-Muminović[1]
[1]Health Center Zenica, Zenica, Bosnia and Herzegovina

Introduction: Educational programmes and activities should affect and cause change in parental and health workers' attitudes towards vaccines and vaccination. **Goal:** The goal of this study was to determine the scope of parental refusal to have their children vaccinated in 2016 in Zenica. Also, this study was to determine the effect vaccine promotion activities had on this phenomenon with regard to the previous two years (2014-2015). **Methods:** Collecting data on the number of parents' written and signed vaccine refusal statements; analysis of data pertaining to the promotional activities and measures of different local Primary health-care center departments („Dom zdravlja Zenica"). **Results:** There were 6174 children under the age of 7 in 2016 in Zenica. In the research-relevant period, there were 58 parents (0.7%) who confirmed via a written statement that they did not want to vaccinate their children. The vaccination refusal was most frequent among the parents of the children under the age of 12 months (29 parents: 2,6%), and the least frequent among the parents of children aged 2-6 (15 parents: 0,3 %). Numerous activities aimed at immunization promotion were conducted in 2016. Different pediatricians or epidemiologists were interviewed in four different TV shows and three newspaper articles dealing with the issue, and they elaborated the significance and necessity of vaccination. Two expert lectures, as well as several professional seminars were organized and held for the health workers employed in

the Primary health-care center. Compared to the period of 2014-2015, somewhat smaller number of the written statements can be noted in 2016: 51 (0,6%). Yet, the number of immunization refusal statements for the children aged to 12 months is climbing. **Conclusion:** Immunization refusal is becoming more and more frequent and it undermines the percentage of the vaccinated children.

Key words: vaccination refusal, education, immunization

MECKELOV DIVERTIKUL - INTESTINALNO KRVARENJE KOD SEDMOGODIŠNJE DJEVOJČICE

Svjetlana Kelava[1], Iva Cvitković[1], Martina Ljoljo[1]
1. Klinika za dječje bolesti Sveučilišne kliničke bolnice Mostar

Cilj: Prikazati varijacije kliničke slike Meckelovog divertikuluma te važnost višestruke dijagnostičke obrade. **Metode:** Prikazali smo slučaj djevojčice u dobi od 7 godina, tjelesne težine 35 kg, urednih vitalnih parametara, afebrilna, koja se prvi put javila na našu kliniku. Dan pred pregled djevojčica je imala četiri bezbolne proljevaste krvave stolice. Tijekom boravka u nekoliko navrata imala stolice sa primjesama krvi. Drugih tegoba nije bilo. U kliničkom statusu nije bilo osobitosti. Po prijemu učinjen je digitorektalni pregled koji je pokazao nalaz svježe krvi. U daljnjem boravku učinjene su laboratorijske pretrage, ultrazvučni pregled abdomena, rtg – nativni snimak abdomena, scintigrafija tehnecij–99-pertehnetatom (Meckel scan), laparatomija, patohistološka dijagnoza. Podaci o učinjenim pretragama prikupljeni su iz bolničkog informatičkog sustava. **Rezultati:** Učinjena laboratorijska obrada pokazala je snižen broj stanica crvene krvne loze sa sniženom vrijednosti hemoglobina do

MECKEL'S DIVERTICUL - INTESTINAL BLEEDING IN SEVEN - YEAR- OLD GIRL

Svjetlana Kelava[1], Iva Cvitković[1], Martina Ljoljo[1]
[1]Clinic for Children's Diseases University Clinic Hospital Mostar, Mostar, Bosnia and Herzegovina

Aim: The aim is to show the variations of the clinical manifestation of Meckel's diverticulum and the importance of multiple diagnostic treatments. **Methods:** We have represent the case of a seven- year- old girl, body weight 35 kg, with the regular vital parameters, afebrile, that came first time to our clinic. A day before the girl was examined she had four painless bloody stools. During hospitalization on several occasions she had stools with blood samples. There were no other sympthoms. There was no distinctiveness in clinical status. At the reception, a digitorectal examination was performed and showed fresh blood. In a further hospital stay we performed laboratory tests, ultrasound abdominal examnination, rtg - abdominal imaging, scintigraphy with technetium-99-pertehnetate, laparatomy, pathohistologic diagnosis. Data on the performed examinations collected from the hospital informatic system. **Results:** Laboratory findings that were performed showed a reduced number of red blood cells with a reduced hemoglobin value of up to 64 g / L, due to

64 g/L zbog čega je ordiniran koncentrat svježih eritrocita u dvije doze nakon kojih dolazi do poboljšanja krvne slike. Na nativnoj slici abdomena nisu utvrđeni znakovi pneumoperitoneuma niti aerolikvidni nivoi. Ultrazvučni nalaz abdomena bio je uredan. Scintigrafijom tehnecij–99-pertehnetatom (Meckel scan) utvrđeno je postojanje ektopične želučane sluznice u desnom donjem abdominalnom kvadrantu, paramedijalno desno. Laparatomijom je učinjena resekcija dijela tankog crijeva sa Meckelovim divertikulom te termino - terminalna anastomoza crijeva. Patohistološka analiza reseciranog dijela crijeva potvrdila je da se radi o ektopičnoj želučanoj sluznici. Postoperativni tijek djevojčice protekao je uredno, bez daljnjeg ponavljanja krvavih stolica. Zaključak: Meckelov divertikul u dječijoj dobi ima različite kliničke manifestacije te bi trebao biti uzet u obzir u diferencijalnoj dijagnozi bolesnika sa hemodinamskim značajnim krvarenjem.

Ključne riječi: Meckelov divertikul, hematokezija, gastrointestinalno krvarenje, divertikulitis

which a fresh erythrocyte concentrate was ordered in two doses after which improvments are made in the blood count. No abnormal signs of pneumoperitoneum or aerodynamic levels were found on the native abdominal image. Ultrasonic abdominal finding is neat. The scintigraphy of technetium-99-pertehnetate (Meckel scan) established the existence of ectopic gastric mucosa in the right lower abdominal quadrant, paramedically right. Laparothomy was done by resection of the small intestine with Meckel's diverticulum and termino-terminal anastomosis of the intestine. Pathohistologic analysis of resected intestine showed gastric mucosis. The postoperative course of the girl passed nicely, without further repetition of bloody stools. **Conclusion:** Meckel's diverticulum at childhood has different clinical manifestations and should be considered in differential diagnosis of hemodynamic significant bleeding patients.

Key words: Meckel's diverticulum, hematochezia, gastrointestinal bleeding, diverticulitis

UPORABA SCHELLONG TESTA U DIJAGNOZI I ODREĐIVANJU VRSTE SINKOPE

Anita Kolobarić[1], Vladimir Jegdić[1], Nađa Ćorda[1]
[1]Sveučilišna klinička bolnica Mostar
Bosna i Hercegovina

Cilj: Ispitati etiologiju sinkope s obzirom na dob i spol. Utvrditi učestalost refleksne sinkope u odnosu na ortostatsku i onu uzrokovanu kardiovaskularnim bolestima. Isključiti epileptičke napade uvidom u EEG te s obzirom na trajanje gubitka svijesti. Potvrditi Schellongovim testom refleksnu sinkopu. **Metode:** Istraživanje je obuhvatilo bolesnice i bolesnike liječene u Klinici za pedijatriju Sveučilišne kliničke bolnice Mostar, kojima je postavljena

THE USE OF SCHELLONG'S TEST IN DIAGNOSIS AND DETERMINATION OF SYNCOPE TYPE

Anita Kolobarić[1], Vladimir Jegdić[1], Nađa Ćorda[1]
[1]University Clinic Hospital Mostar, Mostar,
Bosnia and Herzegovina

Aim: To examine the etiology of syncope with regard to age and gender. Determine the frequency of reflex syncope in relation to orthostatic and cardiovascular diseases. Turn off epileptic attacks by inspecting the EEG and considering the duration of loss of consciousness. Confirm with Schellong's test vasovagal syncope. **Methods:** The study included patients treated at the Pediatrics University

dijagnoza sinkopa i kolaps. Razdoblje istraživanja bilo je od 1. lipnja 2016. do 1. lipnja 2017. godine. Kao glavnu metodu istraživanja koristili smo Schellong test. Schellong test je modifikacija tilt-table testa. Bolesnicima je rečeno da zauzmu ležeći položaj u trajanju od 10 minuta nakon čega smo mjerili arterijski tlak i puls. Sljedeći korak je mjerenje arterijskog tlaka i pulsa u stojećem položaju. Schellongovim testom smo potvrdili dijagnozu refleksne (vazovagalne) sinkope kod bolesnika kod kojih ona nije mogla biti dokazana inicijalnim ispitivanjima. U statističkoj obradi podataka koristio se $\chi 2$ test. **Rezultati:** U istraživanje je uključeno 30 bolesnika kojima je postavljena dijagnoza sinkopa i kolaps. U istraživanom uzorku je bilo značajno više ispitanika u dobnoj skupini 14 – 18 godina (P=0,011). Naše istraživanje je pokazalo da je najzastupljenija refleksna sinkopa, a slijede je ortostatska i sinkopa uzrokovana kardiovaskularnim bolestima (P<0,001). Razlika je bila značajna i kod nalaza EKG (P<0,001). Na kraju, nismo pronašli značajnu razliku učestalosti među spolovima u odnosu na dob (P=0,954) (iako je u ispitivanom uzorku bio veći broj ispitanika ženskog spola), tip sinkope (P=0,283), nalaz EKG (P=0,800). Zaključno, razlika je postojala s obzirom na dob (P=0,011) . **Zaključak:** Refleksna sinkopa je najčešći tip sinkope u dobi od 14-18 godina. U dobi mlađoj od 14 godina češća je ortostatska hipotenzija. Na trećem mjestu je sinkopa uzrokovana kardiovaskularnim poreremećajima.

Ključne riječi: sinkopa, Schellong test ,EKG, EEG.

hospital Mostar, who have been diagnosed with syncope and collapse. The period of investigation was from 1. June 2016. to 1. June 2017. As the main method we used Schellong's test (modification of the tilt-table test). Patients were told to take a lying position for 10 minutes after which we measured arterial pressure and pulse. The next step is to measure arterial pressure and pulse in the standing position. With Schellong's test, we confirmed the diagnosis of vasovagal syncope in patients who could not be proven by initial assays. In the statistical data was used $\chi 2$ test. **Results:** Thirty patients with syncope diagnosis and collapse were included in the study. There were significantly more respondents in the age group 14 to 18 years (P=0,011). Our research has shown that the most common syncope is reflex syncope followed by orthostatic and cardiovascular (P <0.001). The difference was also significant in EKG findings (P <0.001). Finally, we did not find a significant gender difference in age (P = 0.954) (although there was a greater number of female subjects), type syncope (P = 0.283), EKG finding (P= 0.800). In conclusion, the difference existed with regard to age (P = 0.011). **Conclusion:** Reflex syncope is the most common type of syncope at the age of 14-18 years. At the age of 14 years, orthostatic hypotension is more common. In third place syncope is caused by cardiovascular disorders.

Key words: syncopa, Schellong test, EKG, EEG.

RECIDIVNI STRIDOR KAO POSLJEDICA PRIROĐENE ANOMALIJE AORTE

Daniela Kraljević[1],Vladimir Jegdic[1], Irma Memidžan[1]
[1]Klinika za dječje bolesti, Sveučilišna Klinička bolnica Mostar, Bosna i Hercegovina

Cilj rada: prikazati dojenče s ponavljanim epizodama dispneje, stridora i respiratorne infekcije, kojem je u 6. mjesecu života dijagnosticiran dvostruki luk aorte i urađen operativni zahvat nakon kojeg respiratorni simptomi nestaju. **Metode:** prikaz slučaja ženskog dojenčeta iz uredne trudnoće, porođeno na termin, carskim rezom kao drugo dijete iz četvrte trudnoće, RM 3400 g, RD 53 cm. U dobi od 1.5 i 3 mjeseca hospitalizirano je na pulmologiji zbog bronhiolitisa s pridruženim wheezingom i inspiratorno -ekspiratornim stridorom, liječeno inhalatornom terapijom 3% NaCl-a, salbutamola te parenteralno kortikosteroidima. U dobi od šest mjeseci života ponovno hospitalizirana radi dodatne dijagnostičke obrade zbog stalno prisutnog stridora. **Rezultati:** U sklopu dijagnostičke obrade urađena bronhoskopija pokaže malaciju traheje u donjoj trećini (ulegnuće u desno). RTG prsnog koša sjenu srca duljeg transferzalnog promjera, nešto naglašenije desne konture, luk aorte se ne može jasno izdiferencirati. ECHO (2D collor Doppler) kojom se ne dokaže postojanje pridruženih anomalija srca i krvnih žila. MSCT toraksa s angiografijom prikaže vidljiv dvostruki luk aorte, koji poput prstena okružuje traheju i ezofagus, oralni dio ezofagusa bez znakova prestenotične dilatacije. Distalni dio ascedentne aorte se pretrahealno razdvoji, oba kraka luka aorte se potom pružaju dorzalno s obje strane traheje, obuhvaćaju traheju i ezofagus, straga se sjedinjuju u proksimalni dio descedentne aorte koja se kaudalno pruža prevertebralno i paravertebralno desno. Traheja je suprakarinarno komprimiranog lumena, najkraćeg promjera 2 mm. **Zaključak:** kod pacijenata s recidivirajućim stridorom po-

RECURRENT STRIDOR AS A CONSEQUENCE OF CONGENITAL AORTIC ANOMALY

Daniela Kraljević[1],Vladimir Jegdic[1], Irma Memidžan[1]
[1]Pediatric Clinic, University Clinical Hospital Mostar, Mostar, Bosnia and Herzegovina

Aim: To present an infant with repeated episodes of dyspnoea, stridors, and respiratory infections who was diagnosed a double arch of the aorta in the 6th month of life, and in whom surgical procedure was performed, after which the respiratory symptoms disappeared. **Methods:** Case report of a female infant from a regular pregnancy, born to a term, cesarean section as the second child of the fourth pregnancy, BW 3400g, BL 53cm. At the age of 1.5m and 3 months of life, he was hospitalized at pulmonology due to bronchiolotis with associated wheezing and inspiratory-expiratory stridor, treated with inhalation therapy of 3% NaCl, salbutamol and parenterally corticosteroids. In the 6th month of life, she was again hospitalized for diagnostic treatmen due to the constantly present stridor. **Results:** As part of the diagnostic treatment, the bronchoscopy showed a tracheomalacia in the lower third (dent in the right). RTG chest shows a shadow of the heart of a long transverse diameter, a slightly more pronounced right contour, the arch of the aorta can not be clearly differentiated. ECHO (2D collor Doppler) does not demonstrate the existence of associated anomalies of the heart and blood vessels MSCT toracic angiography showing double arch of the aorta, like the ring, surrounds trachea and esophagus, the oral part of the esophagus without signs of prestenosis dilatation. The distal part of the ascendent aorta is split, the two arms of the aorta arch are then provided dorsally on both sides of the trachea, comprising the trachea and the esophagus, and the latter are joined to the proximal part of the descending aorta, in-

trebno je posumnjati na opstrukciju velikih disajnih putova uzrokovanu ekstrapulmonalnim bolestima.

Ključne riječi: stridor, traheomalacija, vaskularni prsten, dvostruki luk aorte.

clude the trachea and the esophagus, the latter being combined into the proximal part of the descendent aorta, which is caudally provided by the vertebral and paravertebral right. Trachea is supracarinari compressed lumen, the shortest diameter of 2 mm. **Conclusion:** In patients with recurrent stridor, it is necessary to suspect obstruction of the large respiratory tract caused by extrapulmonary diseases.

Key words: double aotric arch, stridor, airway obstruction, tracheomalacia, vascular ring.

KRVARENJE VARIKOZITETA JEDNJAKA KOD JEDNOGODIŠNJEG DJEČAKA-PRIKAZ SLUČAJA

Irma Memidžan, Anita Kolobarić, Iva Tomić, Sveučilišna klinička bolnica Mostar

Cilj: Skrenuti pozornost na krvarenja iz gornjeg gastrointestinalnog sustava i prezentirati terapijski pristup. **Metode:** Rezultati su dobijeni na temelju heteroanamnestičkih podataka, kliničkog pregleda, laboratorijskih nalaza, nativne RTG snimke abdomena, fiber endoskopije epifarinksa i ezofagogastroskopije. Prikaz slučaja muškog djeteta u dobi od jedne godine, koji je hitno hospitaliziran na našu Kliniku zbog obilne hematemeze. Rođen kao drugo dijete iz majčine rizične trudnoće, održavane gestagenima i mirovanjem. Porod vaginalni u 29 tjednu gestacije, RM 1500, RD 43cm. Dva mjeseca boravio na odjelu neonatologije. Prebolovao ranu i kasnu novorođenačku sepsu. Redovito kontroliran kod neuropedijatra i kardiologa. Par sati prije dolaska kod kuće dječak je povratio obilnu količinu najprije zgrušane potom sviježe krvi. Taj dan febricirao te je doktor u terapiju uveo antibiotik. Pri pregledu u usnoj šupljini tragovi krvi, abdomen mekan bezbolan. **Rezultati:** U početnoj laboratorijskoj obradi uočio se blagi pad vrijednosti

BLEEDING OF VARICOSE IN ESOPHAGUS IN A ONE YEAR OLD CHILD-CASE REPORT

Irma Memidžan[1], Anita Kolobarić[1], Iva Tomić[1]
[1]University Clinical Hospital Mostar, Mostar, Bosnia and Herzegovina

Aim: Turn the attention to bleeding from the upper gastrointestinal system and present a therapeutic approach. **Methods:** The results were obtained based on heteroanamnestic data, clinical examinations, laboratory findings, abdominal native X-ray, fiber nasopharyngeal endoscopy and esophagogastroscopy. A case report of a male child age of one, who was urgently hospitalized at our clinic due to abundant hematemesis. Born as the second child of mother's risky pregnancy, maintained by gestads and at rest. Born vaginal at 29 weeks of gestation, BW 1500g, BL 43cm. He spent two months at the Neonatology Department. He overcame the wound and the late newborn's sepsis. Controlled regularly by a neuropediatry and a cardiologist. A few hours before hospitalization, he vomited an abundant amount of blood, first coagulates and then fresh blood. That day he had a temperature and the doctor administered an antibiotic therapy. Physical examination in the oral cavity showed traces of blood, abdomen

hemoglobina dok se u kontrolnom hemogramu nakon ponovljene obilne hematemze uoči značajan pad hemoglobina zbog čega je ordinirana transfuzija eritrocita. Nativni RTG snimak abdomena je opisan kao uredan. Nalaz fiber endoskopije epifarinksa također uredan nalaz. Ezofagoskopija pokaže varikozitete u donjoj trećini jednjaka, erodiranog zida. Gastroskopija ukaže na trgove stare i svježe krvi. **Zaključak:** Nakon ordinirane terapiju somatostatinom u dozi od 0.01 mg/kg/TT intravenski nije uočeno daljnje krvarenje te je bolesnik premješten na daljnje liječenje u Klinički bolnički centar Zagreb „Rebro". Na kontrolnom endoskopskom nalazu je uočeno poboljšanje. Zbog rane pojave portalne hipertenzije, učinjena je biopsija jetre. Patohistološka analiza je pokazala nekoliko proširenih portalnih prostora s dilatiranim žućnim kanalićima. Ordiniran je profilaksa ponovnog krvarenja propranololom uz daljnje redovito praćenje.

Ključne riječi: hematemeza, varikoziteti jednjaka, somatostatin

soft, painless. **Results:** A slight decrease in hemoglobin values was observed in the initial laboratory examination, whereas in the control laboratory examination after repeated haematemesis there was a significant decrease in hemoglobin due to which we ordered erythrocyte transfusion. Abdominal native X-ray imaging showed normal result. The finding of fiber nasopharyngeal endoscopy was also normal. Esophagoscopy showed varicose veins in the lower third of the esophagus, an eroded wall. Gastroscopy showed the squares of old and fresh blood. **Conclusion:** After treatment with somatostatin (0,01 mg/kg), no further bleeding was observed and the patient was transferred to further treatment at the Clinical Hospital Center Zagreb "Rebro". There was an improvement in the control endoscopic finding. Due to the early appearance of portal hypertension, liver biopsy was performed. Histopathological analysis had shown several expanded portal spaces with dilated jugular canals. Propranolol reuptake prophylaxis was ordered with further regular monitoring.

Key words: hematemesis, esophageal varices, somatostatin

AKCIDENTALNA RUPTURA EZOFAGUSA TOKOM EKSTIRPACIJE STRANOG TIJELA-PRIKAZ SLUČAJA

Verica Mišanovic [1], Duško Anić[1], Amra Džinovic[1], Melika Đozić[1] , Alen Pilav[2], Kenan Karavdić[3], Amira Mešić[3] , Irmina Sefić-Pašić[4], Amra Džananović[4], Edin Begić[5]
[1]Pedijatrijska klinika, UKC Sarajevo, Sarajevo, Bosna i Hercegovina
[2]Klinika za torakalnu hirurgiju , UKC Sarajevo, Sarajevo, Bosna i Hercegovina
[3]Klinika za dječiju hirugiju, UKC Sarajevo, Sarajevo, Bosna i Hercegovina
[4]Klinika Za radiologiju, UKC Sarajevo, Sarajevo, Bosna i Hercegovina

SPONTANEOUS ESOPHAGEAL RUPTURE DURING FOREIGN BODY EXTRIPATION - CASE REPORT

Verica Mišanovic[1], Duško Anić[1], Amra Džinovic[1], Melika Djozic[1], Alen Pilav [2], Kenan Karavdic[3], Amira Mesic[3], Amra Dzananovic[4], Begic Edin[5]
[1]Pediatric Clinic, Clinical Center University of Sarajevo, Sarajevo, Bosnia and Herzegovina
[2]Clinic for Thoracic Surgery, Clinical Center University of Sarajevo, Sarajevo, Bosnia and Herzegovina
[3]Clinic for Pediatric Surgery, Clinical Center University of Sarajevo, Bosnia and Herzegovina
[4]Clinic for Radiology, Clinical Center University of Sarajevo, Bosnia and Herzegovina

Uvod: CIlj rada je prikaz akcidentalne rupture jednjaka nakon endoskopske intervencije vađenja stranog tijela kod 7.5 godišnje djevojčice. **Pacijenti i metode:** Rad predstavlja prikaz slučaja djevojčice koja je primljena na Kliniku pod dijagnozom Corpus alienum oesophagei, Emphysema subcutaneus coli bil pp l.sin.Pleuropneumonia l.dex. **Prikaz slucaja:** Na prijemu pacijentica komunikativna, žali se na bol u leđima i trbuhu, afebrilna, tahidispnoična, cijanotičnih okrajina. Palpabilan subkutani emfizem u području vrata lijevo i gornjeg dijela grudnog koša obostrano. Sat.O2 97%, puls 125/min.Auskultatorno desno oslabljeno disanje (CRP 230.9 mg/l). RTG snimak toraksa i abdomena pokazuje pleuralni izljev koji se drenira od strane dječijeg hirurga. Obzirom da se klinička slika pogoršava u smislu razvoja medijastinitisa, šoka, realizira se hitni CT snimak toraksa.Nakon konsultacije sa dječijim i torakalnim hirurzima postavi se indikacija za hitni operativni tretman. U operacijskoj sali uradi se gastroskopija te se na dubini 13 cm od sjekutića vizuelizira ruptura ezofagusa promjera 1x1.5 cm na stražnjem zidu. Izvadi se strano tijelo u cijelosti (rezdelija) uz plasiranje medijastinalnog i pleuralnog drena sa oko 2000 ml gustog sadržaja (gnoj). U daljem toku liječenja izvede se jejunostoma putem koje se djevojčica . Razviju se komplikacije u smislu sistemskog infekta-sepsa, masivne tromboembolije u terminalnim dijelovima obe plućne arterije. Terapija antibiotska i antitrombotična - niskomolekularnim heparinom. Nakon pet mjeseci konzervativnog liječenja djevojčica se otpušta kući kao izliječena. **Zaključak:** Ruptura ezofagusa nakon endoskopske intervencije ima brz klinički tok i visoku stopu smrtnosti. Rana dijagnoza i brzi hirurški zahvat su preduvjet da se izbjegne razvoj životno limitirajućih komplikacija –medijastinitisa, koje mogu dovesti do smrtnog ishoda.

Introduction: The aim of this research is to present spontaneous esophageal rupture during foreign body extirpation in a 7.5- year- old girl. **Material and methods:** Article present case report of female patient was admitted to the department under following diagnoses: Corpus alienum oesophageus, Emphysema subcutaneus coli bil pp l.sin., Pleuropneumonia l.dex. **Case report:** At the reception she was communicative, complained on back and abdominal pain, and she was afebrile, tachyapneic, with cyanotic distal part of the extremities, Subcutaneous emphysema in the area of neck to the left and upper part of the chest on both sides was opserved by palpation. Sat.O2 was 97%, heart rate was 125/min. Auscultation showed weakened breathing on the right side (CRP 230.9 mg/l). X-ray of the thorax and abdomen showed pleural effusion, which is drained by the pediatric surgeon. Since the clinical picture worsens in terms of developing mediastinitis, shock, urgent CT of the thorax was performed indication of urgent operative treatment was given. In the operating room, gastroscopy was performed and at a depth of 13 cm from the incisor, 1x1.5cm diameter esophagus rupture is visualized on the back wall. The foreign body was removed in its entirety (cherry plum) with the release of a mediastinal and pleural drainage with about 2000 ml of dense content. In the further course of the treatment, jejunostomy is performed. Complications are developed in terms of systemic septal infection and massive thromboembolism. Antibiotic therapy and low molecular weight heparin was administered (with administration of supportive therapy). After five months of conservative treatment patient was discarged in good general condition. **Conclusion:** Esophagus rupture after endoscopic intervention has rapid clinical course and a high mortality rate. Early diagnosis and urgent surgery are

Ključne riječi: ruptura ezofagusa, medijastinitis, konzervativni tretman.

prerequisite to avoid the development of life-limiting complications (mediastinitis) that lead to fatal outcome.

Key words: esophagus rupture, mediastinitis, conservative treatment.

PRIKAZ BROJA NOVOTKRIVENIH PACIJENATA OBOLJELIH OD DIABETES MELLITUSA TIP 1 U PERIODU OD POČETKA 2008.GODINE DO KRAJA 2017. GODINE

I. Mrkonja, B. Tarakčija, B. Brdarević
Ju Bolnica Travnik

Cilj rada: Cilj rada je da se napravi prikaz broja novotkrivenih pacijenata oboljelih od diabetes mellitusa tip 1 za desetogodišnji period, te poređenje dobijenih rezultata sa ranijim studijama koje smo ranije radili („Statistički prikaz pojavljivanja dijabetes melitusa tip 1 u dječijoj dobi na području Srednjobosanskog kantona u period od početka 2000. godine do kraja 2009. godine" prezentiran na 4. Kongresu pedijatara BiH). **Ispitanici i metode:** Studija je retrospektivna i bazira se na pregledu istorija bolesti pacijenata liječenih na Pedijatrijskom odjelu Bolnice Travnik u periodu od 1.1.2008. godine do 31.12.2017. godine. Drugi izvor podataka su kartoni pacijenata oboljelih od Diabetes mellitusa tip 1. **Rezultati:** Na pedijatriji je za navedeni period hospitalizirano 20.000 pacijenata, od toga novootkrivenih pacijenata oboljelih od diabetes mellitusa tip 1 46 što je prosječno 4-5 pacijenata godišnje. Poređenjem sa prethodnom studiom broj novotkrivenih dijabetičara je povećan za 3. Najmlađi pacijent je bio u dobi od 10 mjeseci, a najstariji 16 godina i 5 mjeseci. Najčešća dob dijagno-

REVIEW OF THE NUMBER OF NEW PATIENTS WITH DIABETES MELLITUS TYPE 1 IN THE PERIOD FROM THE BEGINNING OF 2008 YEAR TO THE END 2017

I. Mrkonja, B. Tarakčija , B. Brdarević
Public Institution Hospital Travnik, Travnik, Bosnia and Herzegovina

The aim is to present an overview of the number of newly discovered diabetics over a ten-year period, and to compare the results obtained with previous studies we have done. **Respondents and methods:** The study is retrospective, based on a review of the anamnesis of patients treated at the Pediatric department Hospital of Travnik in the period from 1.1.2008. to 31.12.2017. and health care cartons of patients suffering from Diabetes mellitus type 1. **Results:** In specified period, 20,000 patients were hospitalized in the Pediatric department. Newly diagnosed diabetics were 46, which is average 4-5 patients a year. By comparison with the previous study, the number of newly diagnosed diabetics has increased by 3. The youngest patient was at age of 10 months and the oldest one was 16 years old and 5 months. The most common diagnosis age is 7 and 13 years old. The number of male and female patients was the same. Comparison of diagnostic tests with the previous study showed progress because all patients had HbA1c, thyroid hormone, cholesterol and triglycerides, and abdominal echography

ze je 7 i 13 godina. Jednak broj pacijenata je muškog i ženskog spola. Poređenjem dijagnostičkih pretraga sa prethodnom studijom vidan je napredak jer su svi pacijeti imali urađen HbA1c, hormone štitne žljezde, holesterol i trigliceride, te ehografiju abdomena i pregled oftalmologa. Mali broj pacijenata koji su bili u stanju teške ketoacidoze kod prijema. **Zaključak:** Navedenom studijom i poređenjem sa prethodnim studijama možemo vidjeti da je povećan broj novotkrivenih pacijenata oboljelih od diabetes mellitusa tip 1. Najčešća dob dijagnoze bolesti je identičan kao kod prethodne studije. Jednak je broj oboljelih muškog i ženskog spola. Uvidom u dijagnostičke pretrage možemo vidjeti da se poboljšala zdravstvena zaštita ovih pacijenata.

Ključne riječi: Diabetes mellitus tip 1, Glycosylated Hemoglobin A1c, ketoacidoza

and examination of ophthalmologists. A small number of patients were in severe ketoacidosis at the time of admission. **Conclusion:** By this study and comparison with previous ones, we can see that the number of newly discovered diabetics has increased. The most common diagnosis of the disease is in the same age as in the previous studys. Equal is the number of males and females affected. By looking at the diagnostic researches we can see that the health care of these patients has improved.

Key words: Diabetes mellitus tip 1, Glycosylated Hemoglobin A1c, ketoacidosis

EKSTREMNI SLUČAJ SIDEROPENIJSKE ANEMIJE DJETETA UZRASTA OD JEDANAEST MJESECI-PRIKAZ BOLESNIKA

Mrkonjić Almir, Abdulović Indira, Hadžimujić Ediba, Strukar Nedim, Milanović Elma, Karahodžić Alisa[1]
JU Bolnica Travnik- Travnik
[1]Dom Zdravlja Gornji Vakuf

Uvod: Anemija uzrokovana nedostakom gvoždja (sideropenijaska anemija, SA) predstavlja najčešći nutritivni poremećaj u dječijoj dobi. Uvodjenje adekvatne nemliječne ishrane u periodu od navršenih 4-6 mjeseci, kao i profilaktička primjena preparata gvoždja kod prijevremeno rođene djece čine osnovu njene prevencije. Prikazujemo jedanaestomjesečno dojenče sa ekstremno teškom SA uzrokovanom lošim socijalnim okruženjem i neadekvatnom brigom majke. **Prikaz bolesnika:**

CASE REPORT: EXTREMLY SEVERE SIDEROPENIC ANAEMIA IN 11- MONTH- OLD INFANT

Almir Mrkonjić, Indira Abdulović, Ediba Hadžimujić, Nedim Struka, Elma Milanović, Alisa Karahodžić[1]
Public Institution Hospital Travnik, Travnik, Bosnia and Herzegovina
[1]Health Center Gornji Vakuf, Gornji Vakuf, Bosnia and Herzegovina

Introduction: Anaemia caused by iron deficiency (sideropenic anaemia, SA) is the most common nutritional disorder in childhood. The introduction of solid foods in the period of 4-6 months, as well as the prophylactic application of iron preparations in prematurely born children, makes the basis of its prevention. We present a case of 11- month-old infant with extremely severe SA caused by a poor social environment and inadequate care

Muško dojenče u dobi od jedanaest mjeseci hospitalizovan zbog patološkog nalaza KS – izrazite anemije. Proslijeđen od strane nadležnog pedijatra, pregled realiziran zbog izrazitog blijedila kože. Rođen kao šesto dijete iz šeste neredovno kontrolisane trudnoće. Porod spontan. Odmah proplakao, nije reanimiran, pravi čvor na pupčanoj vrpci. PM 2900 PD 51 cm. BCGiran i prva doza HEB vakcine na Porodilištu a zatim neredovno vakcinisan. Dojila kratko a zatim hranjen naturalnim kravljim mlijekom. Pokušali uvesti nemliječne obroke, ali nakon izbijanja zubića majka ponovo davala samo kravlje mlijeko. Podataka o krvarenju i o učestalim infekcijama nema. Antirahitičnu profilaksu nisu sprovodili. Na prijemu izrazito blijede boje kože i vidljivih sluznica, lako dehidrirano, plačljivo. TM 8860g (5p), TD 76cm(25 p), OG 46cm(50 p). Laboratoriski nalazi na prijemu: Er 1.55, Hgb 2.28, Hct 7.9, MCV 51.2, MCH 14.7, MCHC 28.9, Tr 396.5, Le 15.38 Ly 74% Mo 9,8% Ne 14% Eo 1,1% Ba 0,23%.Feritin 4.4. Retikulociti 139/1000Er CRP 4. 0 Test na okultno krvarenje u stolici: pozitivan (+). IgE 26.2. Korekcija anemije je zahtijevala transfuzije krvi, oralnu nadoknadu deficita željeza i odgovarajući režim ishrane. Otpušten kući poslije dvadeset sest dana hospitalizacije sa laboratoriskim nalazima: Er 3.89, Hgb 8.1, Hct 25.9, MCV 66.6, MCH 20.8, MCHC 31.3, Le 6.4, Ly 54% Mo 5% gr 40% Tr 266. **Zaključak:** Prikazani bolesnik predstavlja klasičan primjer teške SA uzrokovane neadekvatnom ishranom.

Ključne riječi: dojenče,sideropenijska anemija

of the mother. **Patient Review:** Male infant at the age of eleven months, breast fed, hospitalized due to a pathological blood tests – extreme anemia. Parents brought him to his pediatrist because he was extremly pale. Born as a sixth child from the sixth, irregularly controlled, pregnancy. Birth by spontaneous vaginal delivery. Immediately started weeping, did not require any form of reanimation, the real node on the umbilical cord. BW 2900 grams, BL 51 cm. He recieved BCG and the first dose of HEB vaccine at the Maternity Hospital and then irregularly vaccinated. Breast-fed shortly and then fed with natural cow's milk. They tried to import solid foods, but after the dentition started, mother gave him cow's milk only. There are no data on bleeding and frequent infections. Antirahitic prophylaxis was not performed. On admission, extremely pale skin and visible mucous membranes, dehydrated, weepy. BM 8860g (5p), BL 76cm (25p), HC 46cm (50p). Lab findings on admission: RBC 1.55, Hgb 2.28, Hct 7.9, MCV 51.2, MCH 14.7, MCHC 28.9. PLT 396.5, WBC 15.38, Ly 74%, Mo 9.8%, Gr 14% Eo 1.1%, Ba 0.23%,Feritin 4.4, Reticulocytes 139/1000 Rbc CRP 4.0. Test for occult blood in stool: positive (+). Total IgE 26.2. Anaemia treatment required blood transfusions, oral iron supplement and an appropriate diet. He was released from hospital after 20 days of treatment. Lab tests on release: Rbc 3.89, Hgb 8.1, Hct 5.9, MCV 66.6, MCH 20.9, MCHC 313.3, WBC 6.4, Ly 54%, Mo 5%, Gr 40%, PLT 266. **Conclusion:** Presented patient is a classic example of severe sideropenic anaemia caused by inadequate nutrition.

Key words: infant, sideropenic anaemia

KONGENITALNI MEGAURETER

Aida Mustajbegović-Pripoljac,
Orhana Grahić-Mujčinović, Edina Muratović,
JU Kantonalna bolnica Zenica

Cilj: procjena kliničkog ishoda dojenčadi sa prenatalno dijagnostikovanim megaureterom i određivanje ishoda liječenja. **Metode:** početne pretrage dijagnostike i praćenja megauretera su ultrazvuk , potom MCUG ili UZ MCUG, (isključiti VUR), nakon toga procjena funkcionalnog stanja bubrega - diuretskim renogramom. Početni pristup je konzervativan. Na osnovu realiziranih pretraga, te kliničkog stanja procjenjuje se indikacija operativnog tretmana. **Rezultati:** dojenče u dobi od 1 mj primljeno na pedijatrijsko odjeljenje zbog povraćanja kada se UZ pregledom abdomena evidentiraju promjene po tipu hidronefroze desnog bubrega III stepena, sa PU stenozom i megaureterom. Slikovnim pretragama (MCUG , dinamska diuretska scintigrafija, te MRI urografija) potvrdi se dijagnoza megauretera. **Zaključak:** Rana dijagnostika anomalija mokraćnog sistema veoma je važna u prevenciji progresivnog smanjenja bubrežne funkcije. Kada se dijagnoza postavi kada već postoje simptomi uroloških poremećaja, tada su već prisutna i funkcionalna oštećenja.

Ključne riječi: dojenče, ultrazvuk, MCUG, MRI urografija, diuretska dinamska scintigrafija.

CONGENITAL MEGAURETER

Aida Mustajbegović-Pripoljac,
Orhana Grahic-Mujčinović, Edina Muratović
Public Institution Cantonal Hospital Zenica

Goal of the study: Evaluation of infants with prenatal diagnosed megaureter, and determination of treatment outcomes. **Methods:** The initial step for evaluation of the megaureter is abdominal ultrasonography followed by MCUG or US MCUG, (excluding VUR), then evaluation of the functional kidney status- the diuretic renogram. The primary approach is conservative. Based on results of diagnostic examinations and clinical status of infant, assessment of surgical treatment will be made. **Result:** We will present case of 1-month-old infant hospitalized at the pediatric depertment due to vomiting. Abdominal ultrasound examination showed hydronephrosis grade III , with PU stenosis and megaureter. Imaging examinations (MCUG, dynamic diuretic scintigraphy, and MRI urography) confirm the diagnosis megaureter. **Conclusion:** Early diagnosis of urinary sistem anomalies is important in preventing progressive renal impairment. If the diagnosis is delayed and there are symptoms of urological disorders, in that case the functional damage is already present.

Key words: infants, ultrasound, MCUG, MRI urography, diuretic dynamic scintigraphy.

KONGENITALNA ADRENALNA HIPERPLAZIJA ZBOG NEDOSTATKA 21-HIDROKSILAZE (KLASIČNI OBLIK, JEDNOSTAVNA VIRILIZIRAJUĆA FORMA, "SIMPLE VIRILISING")

Jelena Nikolić
Željka Bilinovac, Marija Šandrk
Klinika za dječje bolesti SKB Mostar

Cilj: Cilj našeg rada bio je ukazati na važnost primarne zdravstvene zaštite u ranom prepoznavanju simptoma i postavljanja sumnje u diferencijalnoj dijagnozi na kongenitalnu adrenalnu hiperplaziju. **Metode:** Prikazali smo djevojčicu u dobi od 14 godina i 10 mjeseci koja se prvi put javila u našu kliniku zbog primarne amenoreje i hirzutizma. U dobi od 11 godina počele su joj se pojavljivati prve tamne i guste dlačice, a godinu dana nakon toga počela se i pojačano znojiti. U kliničkom statusu isticala se: tjelesna visina 182.3 cm (iznad 95.percentile), dublji glas, visoko nepce, grublje crte lica. Maljavost prema Ferriman Gallwe skali 24. Muški tip dlakavosti. Dojke po Tanneru 2, spolovilo izvana žensko, uredno, po Tanneru 5, klitoris izraženiji. Tijekom boravka uradili smo svu dostupnu laboratorijsku obradu uključujući i Synacten test te slikovnu dijagnostiku (rentgenogram zapešća, ultrazvuk štitnjače i abdomena te magnetnu rezonancu nadbubrežne žlijezde) te konzultirali specijaliste iz drugih oblasti (ginekolog, oftalmolog i radiolog). **Rezultati:** Navedene pretrage su pokazale povišene vrijednosti: adrenokortikotropnog hormona, 17-OH progesterona, dehidroepiandrosterona, androstendiona, reninske aktivnosti plazme i testosterona te snižene vrijednosti kortizola. Vrijednost aldosterona bila je u referentnim vrijednostima. Koštana starost odgovarala je kronološkoj dobi od 16 godina i 6 mjeseci (prema Greulich-Pyleu atlasu). Dobili smo uredan kariogram: 46, XX, uredan ženski

CONGENITAL ADRENAL HYPERPLASIA DUE TO LACK OF 21-HYDROXYLASE (CLASSIC FORM, SIMPLE VIRILIZING FORM, "SIMPLE VIRILISING")

Jelena Nikolic, Željka Bilinovac, Marija Šandrk
Clinic for Children's Diseases, University Clinical Hospital Mostar, Mostar, Bosnia and Herzegovina

Objective: The aim of our work was to point out the importance of primary health care in early detection of symptoms and the setting of suspicion in differential diagnosis of congenital adrenal hyperplasia. **Methods:** We have represent the case of a girl at the age of 14 years and 10 months who first reported to our clinic due to primary amenorrhea and hirsutism. At the age of 11, first dark and thick hair began to appear, and a year later she began to sweat intensively. In the clinical status following was emphasized: body height 182.3 cm (above 95 percent), deeper voice, high palate, harsh facial features. Hirsutism to Ferriman Gallwe scale 24. Male hair type. Breast by Tanner 2, genitals externally female, regular, by Tanner 5, clitoris more pronounced. During the stay we made all the available laboratory processing including Synacten test and imaging diagnostics (roentgenogram of wrists, thyroid and abdominal ultrasound and magnetic resonance imaging of the adrenal gland) and consulted specialists from other areas (gynecologist, ophthalmologist and radiologist). **Results:** The aforementioned tests showed elevated values: adrenocorticotropic hormone, 17-OH progesterone, dehydroepiandrosterone, androstendone, renin activity of plasma and testosterone, and reduced cortisol values. The value of aldosterone was in reference values. Bones age corresponded to a chronological age of 16 years and 6 months (according to Greulich-Pyle atlas). We got a regular karyogram: 46, XX, a regular female

kariotip. **Zaključak:** Temeljem navedenih rezultata, pokazali smo da se kod naše pacijentice radi o klasičnom obliku kongenitalne adrenalne hiperplazije zbog nedostatka 21 hidroksilaze, jednostavna virilizirajuća forma, a kao posljedica androgenizacije razvio se hirzutizam i primarna amenoreja. Nakon uvođenja nadomjesne terapije kortizolom, djevojčica je za nepunu godinu dana dobila menarhu.

Ključne riječi: amenoreja, hirzutizam i žlijezda.

karyotype. **Conclusion:** Based on the above results, we have shown that our patient has a classical form of congenital adrenal hyperplasia because of the lack of 21 hydroxylase, a simple virilising form, and as a result of androgenization developed hirzutism and primary amenorrhea. After inclusion of compensatory therapy with cortisol, the girl got the menarche in less than a year.

Key words: amenorrhea, hirsutism and gland.

KOMPENZACIJSKI RAST I RAZVOJ PLUĆA NAKON RESEKCIJE PLUĆA

Tamara Nikše, Daniela Kraljević, Borko Rajič
Sveučilišna klinička bolnica, Mostar, BiH

Cilj: Ovim prikazom slučaja želja nam je prezentirati iznenađujuće dobar kompenzatorni odgovor plućnog parenhima na subtotalnu lijevostranu pulmonektomiju. **Metode:** Uvid u medicinsku dokumentaciju naše pacijentice. Riječ je o djevojčici u dobi od 2 godine koja je hospitalizirana u našoj Klinici zbog nekrotizirajuće upale pluća. Početni RTG toraksa je govorio u prilog pleuropneumonije sa izljevom, koji je odmah izdreniran (1600 ml tekućine). Po prijemu je započeta empirijska antibiotska terapija (ceftriaxon, cloxacillin ,azitromicin). Zbog slabog kliničkog odgovora peti dan boravka terapija se revidira (meropenem, vankomicin). Napravi se MSCT toraksa koji pokaže znakove opsežne nekroze plućnog parenhima. Obzirom na nalaz MSCT-a učini se totalna resekcija gornjeg lijevog plućnog režnja, uz parcijalnu resekciju donjeg plućnog režnja. Na kontrolnom MSCT-u vide se u lijevom prsištu znaci likvidopneumotoraksa, te ja-

COMPENSATION GROWTH AND DEVELOPMENT OF THE LUNG AFTER RESECTION

University Clinical Hospital Mostar, Mostar, Bosnia and Herzegovina

Aim: In this case report, we want to present an amazingly good compensatory response of pulmonary parenchyma to subtotal left pulmectomy. **Methods:** Investigating medical history from our patient. A two year- old- girl was hospitalized in our Clinic because of necrotizing pneumonia. First RDG of the lungs showed pleuropneumia with effusion, it was immediately evacuated (1600 ml). We started empirical antibiotic therapy (ceftriaxone, cloxacillin, azitromicin). Fifth day the therapy was changed because she was not doing better (meropenem, vancomycin). MSCT of the thorax showed extensive necrosis of the lung parenchyma. Total resection of the upper left pulmonary lobe and partial resection of the lower lobe was done. Control MSCT of the thorax showed the signs of the liquidopneumothorax in the left chest and clearly limited air inclusions, residual pulmonary parenchyma collapsed. There was no bronchus for the

sno ograničene inkluzije zraka, dok je ostatni plućni parenhim kolabiran. Ne uočava se bronh za donji plućni režanj lijevo, dok je bronh za gornji režanj reduciranog lumena i samo dijelom prikazan. Pacijentica provodi fizikalnu i respiratornu terapiju i uredno se razvija bez znakova plućne insuficijencije. **Rezultati:** Na MSCT-u toraksa učinjenom tri godine nakon operativnog zahvata vidi se reduciran volumen gornjeg plućnog režnja lijevo. Lijevo postero i laterobazalno, te u području donjeg segmenta lingule uočavaju se zone različite prozračnosti plućnog parenhima (znaci panlobularnog/ožiljnog emfizema). Ostali plućni parenhim lijevo je urednih RTG karakteristika. **Zaključak:** U literaturi postoje opisani primjeri za kompenzatorni plućni rast, pogotovo ako se ozljeda dogodi prije 4. godine života. Ipak vidjevši slike MSCT-a prije i poslije ne možemo se oteti dojmu da se u našem slučaju dogodio izrazito značajan kompenzatorni rast.

Ključne riječi: djeca, pluća, resekcija

lower pulmonary lobe left, while bronze for the lower lobe was of reduced lumen and only partially shown. The patient performs physical and respiratory therapy and develops neatly without signs of pulmonary insufficiency. **Results:** MSCT of the thorax that was done three years after the surgery shows a reduced volume of the upper left lung. Left posterior and laterobasal, and in the area of the lower segment of the lingula are observed zones of different airiness of pulmonary parenchyma (signs panlobular/scarred emphysema). Residual pulmonary parenchyma on the left showed regular RDG features. **Conclusion:** In the literature there are described examples of compensatory pulmonary growth, especially if the injury occurs before the age of 4 years. Still, seeing MSCT images before and after we cannot get rid of the impression that in our case a significant compensatory growth has occurred.

Keywords: infant, lungs, resection

PREDNJI MEDIJASTINALNI TERATOMI- PRIKAZ SLUČAJA

Osmančević - Muminović Jasmina,
Ćemalović Sabina, Hairlahović Arnela,
Amel Mizić, Hatidza Hairlahović,
Dom zdravlja Cazin, Dispanzer za zdravstvenu zaštitu djece

Prednji medijastinalni teratomi su rijetki tumori zametnih ćelija. Mi smo prikazali zanimljiv slučaj takvog tumora kod 14-godišnje djevojčice koji se otkrio nakon obrade zbog desetodnevnog kašlja i retrosternalne boli koja se širila u lijevu ruku. RTG Pulmo et cor je pokazao perikardijalni izljev kada se posumnja na kongenitalnu anomaliju. Nakon obrade u primarnoj zdravstvenoj zaštiti i na sekundar-

ANTERIOR MEDIASTINAL TERATOMA - CASE REPORT

Jasmina Osmančević - Muminović,
Sabina Ćemalović, Arnela Hairlahović,
Amel Mizić, Hatidža Hairlahović
Health Center Cazin, Department for Health Care of Children, Bosnia and Herzegovina

Anterior mediastinal teratomas are rare germ cell tumors. We have shown an interesting case of such a tumor in a 14-year-old girl that was discovered after the treatment for a ten-day cough and retrosternal pain that spread to the left arm. RTG Pulmo et cor showed pericardial effusion when was suspected of congenital anomaly. After the treatment in primary healthcare and at secondary level, the

nom nivou, pacijentica upućena na Pedijatrijsku kliniku u UKC Sarajevo gdje je urađen CT THORAXA. Na CT-u je prikazana velika ekspanzivna formacija u prednjem medijastinumu koja se ponaša kompresivno i potiskuje medijastinalne strukture. Na Klinici za dječiju hirurgiju izvršen je operativni zahvat sa ekstirpacijom tumefakcije. Patohistološki nalaz pokazuje dijagnozu Teratoma maturum mediastini. Postoperativni tok je protekao uredno. Kontrolni CT Thoraxa urađen je 4 mjeseca nakon operativnog zahvata na kojem se nije našlo znakova recidiva ranije operiranog teratoma.

Ključne riječi: Tumori zametnih ćelija, Perikardijalni izljev, Teratom maturum medijastini, Kompjuterizovana tomografija.

patient was referred to the Pediatric Clinic in UKC Sarajevo where CT was performed. CT is depicted as a large expansional formation in the anterior mediastinal that acts comfortably and suppresses the mediastinal structure. At the Clinic for Children Surgery an operative procedure with extirpation of tumefactus was performed. Patohistological findings indicate the diagnosis of Teratoma maturum mediastin. Postoperative flow has gone smoothly. Control CT Thorax was performed 4 months after the operation that did not show any signs of relapse of previously operated teratoma.

Key words: Germ cells tumors, Pericardial effusion, Teratoma maturum mediastinal, Computerized tomography.

ALCAPA SINDROM

Elvisa Patković Hadžić[1], Vladimir Jegdić [2]
[1]DZ Stari Grad Mostar,
[2]Klinika za dječije bolesti SKB Mostar

Cilj rada: prikaz slučaja dojenčeta sa ALCAPA sindromom,značaj pravovremenog prepoznavanja srčane greške,dijagnostički i terapijski postupak. **Metode:** prikaz slučaja,uvid u medicinsku dokumentaciju. **Prikaz slučaja:** Muško dojenče u dobi od 2 mjeseca hospitalizirano je u našoj Klinici na Odjelu pulmologije zbog otežanog disanja i sumnje na aspiraciju.Tegobe su započele u dobi od 1.5 mjeseci života u vidu neutješnog plača,blijedila kože,-povremene cijanoze u licu,nenapredovanja na težini i dijaforeze.Započetom dijagnostičkom obradom na RTG grudnog koša uoči se uvećana srčana sjena,dominantno lijeva strana srca. EKG nalaz: sinusni ritam,nešto viši P val,fr 150/min,električna os intermedijarna,pozitivan T val u V1 te negativni T u V5 i V6,nema poremećaja ST spojnice.Ehokardiografski nalaz:Izrazita dominacija lijeve klijetke.Kon-

ALCAPA SYNDROME

Elvisa Patković Hadžić[1], Vladimir Jegdić[2]
[1]Primary Health Care Center Old Town Mostar, Mostar, Bosnia and Herzegovina
[2]Pediatrics Department of Clinical Hospital Mostar, Mostar, Bosnia and Herzegovina

Purpose: Presentation of children with ALCAPA syndrome, importance of timely identification of heart failure, diagnostic procedure and treatment. **Methods:** case report, medical documentation. **Case report:** The two- month- old male infant was hospitalized in Department of Pulmology Clinic Hospital Mostar for dispnea and suspicion of aspiration. Simptoms included irritability,discomfort, pallor, intermitent cyanosis, diaphoresis after feeding, and poor weight gain. Roentgenographic examination confirms cardiomegaly. Elektrocardiogram results: sinus rythm, larger P wave, frequency 150/min,intermediate electric axis,positive T wave lead V1,negative T wave leads V5 and V6,normal ST segment. Ehocardiography: Dominant left ventricle,

traktilnost miokrada oslabljena.Insuficijencija mitralne valvule najmanje drugog stepena.Insuficijencija trikuspidne valvule s brzinom regurgitacije do 2.5 m/s.Vidljivo izlazište desne koronarne arterije.Malo perikardijalnog izljeva uz desnu stranu srca. Postavi se sumnja na ALCAPA sindrom koji se potvrdi kateterizacijom srca u KCU Sarajevo. **Terapija:** Složena kardiohirurška operacija (reimplantacija lijeve koronarne arterije u aortu) u Acibadem klinici u Istanbulu, Aspirin 1x50 mg, Captopril 3x3 mg, Plavix 1x5 mg,Vitamin D3 kapi 1x5 kapi. Postoperativni tok praćen komplikacijama: suženje lijeve koronarne arterije, ugradnja stenta, strojna ventilacija, traheostoma. **Rezultati:** Dječak dolazi redovno na kontrolne pregled, dobrog općeg stanja i urednog napredovanja na težini. Planiralna kontrolna kateterizacija srca u Acibadem klinici u Istanbulu. **Zaključak:** ALCAPA sindrom (Bland-White-Garlandov sindrom) predstavlja rijetku ali ozbiljnu kongenitalnu srčanu grešku nastalu zbog anomalnog odvajanja lijeve koronarne arterije od plućne arterije. Incidenca ALCAPA sindroma je 1:300 000 (0.24.-0.46% svih srčanih greški). Klinički se prezentuje 1-2 mjeseca nakon rođenja djeteta (pad tlaka u plućnoj arteriji, ishemija miokarda, srčana insuficijencija) u vidu neutješnog plača,dispneje,dijaforeze,slabog sisanja i napredovanja na težini. Prognoza je dobra ukoliko se oboljenje prepozna na vrijeme (ehokardiografija i operativni tretman).

Ključne riječi: srčana greška,ehokardiografija,kateterizacija.

decreased myocardial contractility, second degree of mitral insufficiency, tricuspidal valve regurgitation (2.5 m/s),normal origin of right coronary artery. Origin of left coronary artery non visible. Pericadial effusion. Cardiac catheterization (Clinical Center Sarajevo) confirmed ALCAPA syndrome. **Treatment:** Difficult cardio surgical operation (detaching the anomalous coronary artery from the pulmonary artery and anastomosing it to the aorta,angiotensin-converting enzyme inhibitors, anticoagulant terapy, Vitamin D) at Acibadem Hospital in Turkey. Postoperative complications: left coronary artery stenosis, stent implantation, mechanical ventilation, tracheostoma. **Results:** Patient successufully recovered without simptoms and normal weight gain. **Conclusion:** ALCAPA syndrome (Bland-White Garland syndrom) is rare, congenital cardiac anomaly caused by anomalous origin of the left coronary artery from the pulmonary artery, accounting for approximately 0.25-0.5% of all congenital heart disease. The incidence of ALCAPA is 1:300 000. Approximately 85% of patients present with clinical symptoms of congestive heart failure (CHF) within the first 1-2 months of life (decreased pulmonary artery pressure, miocardial ischemia, heart failure). The clinical presentation with symptoms of myocardial ischemia: irritability, discomfort, pallor, intermitent cyanosis, diaphoresis after feeding and poor weight gain. Early diagnosis using echocardiography with color flow mapping and improvements in surgical techniques (eg, myocardial preservation) dramatically improve prognosis.

Keywords: heart failure, ehocardiography, catheterisation.

CIJEPLJENJE I RAZLOZI ODGODE I ODBIJANJA CIJEPLJENJA OD STRANE RODITELJA I LIJEČNIKA U GRADU MOSTARU U 2017. GODINI

Borko Rajič[1], Ante Damjanović[1], Daniela Kraljević[1], Ana Damjanović[2], Božo Šušak[3]
[1]Klinika za dječje bolesti SKB Mostar, [2]Klinika za ginekologiju i porodništvo SKB Mostar,

Cilj: U ovom istraživanju cilj je bio ispitati znanje i stavove roditelja i liječnika u gradu Mostaru o cijepljenju, utvrditi razloge odgađanja ili odbijanja kod djece, te utvrditi medicinsku opravdanost ispitivanih odgađanja i odbijanja. **Metode:** U istraživanje je bila uključena skupina od 409 ispitanika. Uzorak od 409 ispitanika činilia su djeca s područja grada Mostara, različite starosti i obaju spolova, različitog zdravstvenog stanja, kod kojih je cijepljenje odgođeno ili odbijeno iz bilo kojeg razloga u 2017. godini. Podatci su prikupljeni pregledavanjem zdravstvenih kartona ispitanika iz arhive centra za cijepljenje Doma zdravlja Mostar.**Rezultati:** U istraživanju je sudjelovalo 183 djece ženskog spola (44.7%), te 226 djece muškog spola (55,3%). Od ukupnog broja ispitanika, njih 70.4% je redovno cijepljeno, u 28.4% slučajeva cijepljenje je odgođeno, a 1.2% čine djeca čiji su roditelji odbili cijepljenje. U populaciji kod koje je cijepljenje odgođeno najčešće odgođeno cjepivo je DTP-IPV-HiB I (29.8%).Najčešći razlog odgode cijepljenja je bio distoni sindrom (31.5%), zatim nedolazak roditelja, nepoznati razlozi, rhinitis, bronchiolitis te ostali. U skupini djece kod kojih je cijepljenje odbijeno najveći broj čine roditelji koji sumnjaju u ispravnost cjepiva (60%), zatim nepoznati razlozi i nedolazak na cijepljenje. Medicinski opravdanih odgoda je bilo 4.36%, dok je većina (95.6%) odgoda medicinski neopravdana. U skupini djece kod koje je cijepljenje odbijeno nije bilo medicinski opravdanih razloga odbijanja.

VACCINATION AND REASONS FOR POSTPONEMENTAND REJECTION OF VACCINATION BY PARENTS AND PHYSICIANS IN MOSTAR IN THE YEAR OF 2017.

Borko Rajič[1], Ante Damjanović[1], Daniela Kraljević[1], Ana Damjanović[2], Božo Šušak[3]
[1]Clinic for Children's Diseases, University Clinical Hospital Mostar, Mostar, Bosnia and Herzegovina
[2]Clinic for Gynecology and Obstetrics University Clinical Hospital Mostar, Mostar, Bosnia and Herzegovina
3Clinic for Infectious Diseases, University Clinical Hospital Mostar, Mostar, Bosnia and Herzegovina

Aim: In this study, the aim was to examine the knowledge and attitudes of parents and doctors in Mostar municipality about vaccination, to determine the reasons for any postponement or refusal of vaccination and to determine medical justification of investigated delays and rejections. **Methods:** This study included 409 subjects. Subjects were children from Mostar municipality, of different ages and both sexes, of different health condition, in whom vaccination is delayed or rejected for any reason in year of 2017. Data about patients were collected by rewieving the medical records of these patients from archive of immunization center of Health Center Mostar. **Results:** There were 183 female children (44.7%) and 226 male children (55.3%). Out of the total number of respondents, 70.4% were regularly vaccinated, in 28.4% vaccination was postponed, and 1.2% were children whose parents refused vaccination.In the population where the vaccination was delayed, the most frequently delayed vaccine was DTP-IPV-HiB I (29.8%). In the group of children whose parents refused vaccination BCG-HepB I the vaccine is most often rejected vaccine.The most common cause of the delaying vaccination was dystonic syndrome (31.5%), then parental nonchalance, unknown reasons, rhinitis, bronchiolitis and others. In the group of children in whom vaccination has been rejected, the largest number is

Zaključak: Ovo istraživanje pokazalo je najčešće razloge odgode i odbijanja cijepljenja kod djece te je pružilo spoznaje o medicinskoj opravdanosti navedenih odgoda i odbijanja cijepljenja u općini Mostar.

Ključne riječi: cijepljenje, cjepivo, kontraindikacije, medicinska opravdanost.

made by parents who suspect the vaccine correctness (60%), then unknown reasons and parental nonchalance.Medical justified delays were 4.36%, while the majority (95.6%) of postponement was medically unjustified. In the group of children where vaccination was rejected, there were no justified reasons for refusal. **Conclusion:** This study showed most common reason for postponoment and refusing vaccination, and also provided cognitions about medical justification for these delays and refusals in Mostar municipality.

Key words: vaccination, vaccine, contraindication, medical justification.

PARALIZA DIJAFRAGME U NOVOROĐENČETA KAO POSLJEDICA IZOLOVANE PAREZE FRENIČNOG ŽIVCA - PRIKAZ SLUČAJA

Amela Selimović[1], Fahrija Skokić[1], Amir Halilbašić[1], A Ćosićkić[1], Azra Feukić[1], Dženana Ostrvica[1], Indira Abdulović[1]
[1]Klinika za dječije bolesti, Univerzitetsko klinički centar Tuzla
[2]Opća bolnica, Travnik, Bosna i Hercegovina

Paraliza dijafragme u novorođenčeta je uglavnom udružena sa parezom brahijalnog pleksusa, dok je izolovana pareza frenićnog živca rijetko rezultat porođajne traume. Značaj joj se ogleda u visokom respiratornom morbiditetu sa posljedičnom respiratornom insuficijencijom. Predstavljamo tri sata staro žensko novorođenče, porođajne mase 2830g, eutrofično za dob, Apgar skor 7 u prvoj i 8 u petoj minuti. Rođeno je prirodnim putem, sa prednjačećom glavicom, a bez distocije ramena. Klinički tok novorođenčeta je bio progresivan, sa perinatalnom asfiksijom i respiratornim distresom već u rađaoni, sa pogoršanjem opšteg stanja

DIAPHRAGMATIC PARALYSIS DUE TO ISOLATED PHRENIC NERVE PALSY IN NEWBORN - CASE REPORT

Amela Selimovic[1], Fahrija Skokic[1], Amir Halilbasic[1], A. Cosickic[1], Azra Feukic[1], Dženana Ostrvica[1], Indira Abdulovic[2]
[1]Clinic for Children's Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina
[2]General Hospital, Travnik, Travnik, Bosnia and Herzegovina

Diaphragmatic paralysis in newborn is usually related to brachial plexus paralysis, but isolated phrenic nerve palasy is a rare result of birth injury. It can cause a high respiratory morbidity leading to respiratory failure. We present the case of a three-hour-old female newborn, who was term, weighted 2830g, was appropriate for gestational age, Apgar score 7 and 8 at first and fifth minutes, respectively. She was born by vaginal delivery with cephalic presentation, without schoulder dystocia. The clinical corse was progressive, with birth asphyxia, respiratory distress needing oxygenotherapy and prolonged mehanical ventilation. Physical examination and chest X-rays confirmed the

uprkos oksigenoterapiji i produženoj mehaničkoj ventilaciji. Fizikalnim pregledom i rentgenom grudnog koša potvrđena je dijagnoza paralize dijafragme usljed izolovane prođajne ozljede freničnog živca. Hirurška plikacija dijafragme je urađena u 19. danu života zbog ponavljano neuspjelih pokušaja odvajanja od mehaničke ventilacije. Dalji klinički tok je bio vrlo nepovoljan, sa izraženo povišenim parametrima sisemske infekcije, multiorganiskim zatajenjem i u konačnici smrtnim ishodom u 23. danu života. **Zaključak:** Paraliza dijafragme kao posjedica ozljede freničnog živca može voditi značajnom respiratornom distresu novorođenčeta, sa upalom pluća i smrtnim ishodom. Zbog brojnih mogućih uročnika respiratornog distresa novorođenčeta, u svakodnevnom radu, lahko previdimo parezu freničnog živca, ukoliko na nju ne posumnjamo i ne sprovedemo detaljan klinički i dijagnostički pristup.

Ključne riječi: novorođenče, paraliza dijafragme, slabost freničnog živca, porođajna trauma

diagnosis of diafragmatic paralysisdue to isolated birth injury of nervus pfrenicus. Surgical plication of diaphragm was done at 19th day of life, because of recurrent extubation failure. Further clinical corse was negative, with significantly high parameters for sepsis, multiorgnic failure and, at the and, death occured on 23rd day of life. **Conclusion:** Diaphragmatic paralysis due to phrenic nerve palsy may result in significant respiratory distress, pulmonary infection and even death. Because of multiple common etiologies of respiratory distress of newborn, this rare cause may be missed, if it is not kept in mind and through examination is not done.

Keywords: newborn, diaphragmatic paralysis, phrenic nerve palsy, birth trauma

ASIMPTOMATSKI MOŽDANI TUBERKULOMI SA AKUTNOM MILIJARNOM TUBERKULOZOM KOD 13-GODIŠNJE DJEVOJČICE-PRIKAZ SLUČAJA

Selma Selimović [1], Amela Pašić [1], Zlata Hajrić[2], Amer Osmanović[3]
[1]Kinika za dječije bolesti, Univerzitetsko klinički centar Tuzla, Bosna i Hercegovina
[2]Odjeljenje za dječije bolesti, Opća bolnica Tešanj, Bosna i Hercegovina
[3]Zavod za kliničku farmakologiju, Univerzitetsko-klinički centar, Tuzla, Bosna i Hercegovina

Uvod: Klinički nemanifestni moždani tuberkulomi sa milijarnom tuberkulozom mogu se rijetko vidjeti, posebno kod imunokompeten-

SILENT BRAIN TUBERCULOMAS WITH ACUTE MILLIARY TUBERCULOSIS IN 13- YEAR OLD GIRL -CASE REPORT

Selma Selimović[1], Amela Pašić1, Zlata Hajrić[2] , Amer Osmanović[3]
[1]Clinic for Children's Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina
[2] Children's Department, General Hospital Tešanj, Tešanj, Bosnia and Herzegovina
[3]Central Pharmacy, University Clinical Center Tuzla,Tuzla, Bosnia and Herzegovina

Introduction: Silent brain tuberculomas with miliary tuberculosis rarely can be seen, particularly in immunocompetent children. **Case report:** We describe iron deficiency and silent

tne dece. **Prikaz slučaja:** Opisali smo nedostatak gvožđa i klinički nemanifestne intrakranijalne tuberkulome sa pulmonarnom milijarnom tuberkulozom kod 13-godišnje djevojčice. Prezentovala se groznicom, produktivnim kašljem i bistrom sekrecijom nosa u trajanju od 20 dana. U posljednjih nekoliko mjeseci imala je izostanak menstrualnog krvarenja. Rentgenogram grudnog koša (PA pogled) prije liječenja pokazao je bilateralno mikronodularno zasjenjenje raspršeno kroz plućna polja. MRI endokranijuma pokazao je višestruke granulome u parenhimu mozga i bez značajnijih karakteristika tuberkuloznog meningitisa. Nije primila BCG vakcinaciju. Sedam dana nakon prijema, nakon urađenih lavaža želuca, započeto je empirijsko liječenje sa 4 tuberkulostatika. Kontrolni MRI endokranijuma pokazao je smanjenje veličine i broja tuberkuloma 4 mjeseca nakon terapije uz poboljšanje opšteg kliničkog stanja djeteta. **Zaključak:** Tuberkulomi mozga i milijarna tuberkuloza su i dalje teška oboljenja, koje izbjegavaju najiskusniji kliničari te i dalje predstavljaju dijagnostički i terapijski izazov. Ostaje otvoreno pitanje da li je neregularno menstrualno krvarenje i nedostatak gvožđa povezano sa padom njenog imuniteta i povećanim rizikom za milijarnu tuberkulozu.

Ključne reči: Plućna milijarna tuberkuloza; Moždani tuberkulomi; Neredovno menstrualno krvarenje; MRI endokranijuma

intracranial tuberculomas with pulmonary miliary tuberculosis in a 13-year- old girl. She presented to us with fever, cough and clear nasal secretion since 20 days. She suffered lack of menstrual bleeding in the past few months. Chest roentgenogram (PA view) before treatment showed bilateral micronodular mottling scattered throughout lung fields. MRI of endocranium showed multiple granuloma formations in brain parenchyma and no significant signs of tuberculosis meningitis. She didn`t received BCG vaccination. Seven days after admission, when gastric lavages were done, empirical 4 antitubercular drug treatment was initiated. MRI of the brain showed a decrease in size and number of brain tuberculomas at 4 months after treatment and generally health state improvement. **Conclusion:** Tuberculomas of the brain and miliary tuberculosis still remains perplexing disease that continues to elude the most experienced clinicians and it is diagnostic and therapeutic challenge. It remains an open question whether the irregular menstrual bleeding and iron deficiency was associated with the drop of her immunity and increased risk for miliary tuberculosis.

Key words: Pulmonary miliary tuberculosis; Brain tuberculomas; Irregular menstrual bleeding; MRI of endocranium

TEŠKA KONGENITALNA CITOMEGALOVIRUSNA INFEKCIJA SA UNILATERALNOM CEREBELARNOM ATROFIJOM – PRIKAZ SLUČAJA

Razija Spahić [1], Amela Selimović [1], Devleta Hadžić [1], Evlijana Zulić [1], Arnela Smriko-Nuhanović [2],
[1]Kinika za dječije bolesti, Univerzitetsko klinički centar Tuzla, Bosna i Hercegovina;
[2]Klinika za infektivne bolesti, Univerzitetsko klinički centar Tuzla, Bosna i Hercegovina

Uvod: Maternofetalna citomegalovirusna (CMV) infekcija je vodeći infektivni uzročnik kongenitalnih malformacija, mentalne retardacije i gluhoće, zahvata oko 1% novorođenčadi. **Prikaz slučaja:** Kongenitalne citomegalovirusne infekcije kod ženskog novorođenčeta rođenog prirodnim putem u 36. gestacijskoj nedjelji, eutrofično za dob (2250grama), sa respiratornim distresom, generalizovanim petehijama, hipotonijom, primljenog u Odjeljenje intezivne njege i terapije, Klinike za dječije bolesti, Tuzla u prvom danu života. U laboratorijskim nalazima se evidentira trombocitopenija (30x109/L), anemija (Hematokrit 0, 28 L/L; Hemoglobin 102 g/L), povišeni jetreni enzimi (AST 164 U/L, ALT 84 U/L iGGT 131 U/L) i povišen direktni bilirubin(ukupni serumski bilirubin 149 μmol/L, direktni bilirubin 103 μmol/l). IgM I IgG na CMV su bili pozitivni dok je PCR za CMV iznosila 4750 kopija/ml. CT mozga je pokazao aplaziju desne hemisphere cerebeluma, ultrazvučno se opiše hepatosplenomegalija dok se na retini evidentira obostrana hemoragija. Petog dana hospitalizacije započeto je liječenje ganciklovirom u trajanju od 6 sedmica nakon čega se nastavi sa valganciklovirom do ukupno 6 mjeseci terapije uz značajno poboljšanje kliničkog stanja djeteta, kao i laboratorijskih nalaza. U 8.mjesecu života kontrolni serološki nalazi kao i PCR na CMV su bili negativni. Tokom dvogodišnjeg praćenja kod pacijentice se evidentira mikrocefalija, prve riječi je imala sa 12

SEVERE CONGENITAL CYTOMEGALOVIRUS INFECTION WITH UNILATERAL CEREBELLAR ATROPHY – CASE REPORT

Razija Spahic[1], Amela Selimovic[1], Devleta Hadzic[1], Evlijana Zulic[1], Arnela Smriko-Nuhanovic[2],
[1]Clinic for Children's Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Introduction: Maternofoetal cytomegalovirus (CMV) infection is the leading infectious cause of congenital malformation, mental retardation and deafness, and affects about 1% of births. **Case report:** We present a case of congenital CMV infection in female newborn born by vaginal delivery in 36. gestational week, weighted 2250g, appropriate for gestational age, with respiratory distress, generalized skin petechiaes, hypotonia, and was admitted in Intensive care and therapy unit, Clinic for Children's Diseases, Tuzla in first day of life. Biological abnormalities included thrombocytopenia (30x109/L), anemia (Hemoglobin 102 g/L, Hematocrit 0,28 L/L), elevated liver enzymes (AST 164 U/L, ALT 84 U/L, and GGT 131 U/L), and elevated direct bilirubin (total serum bilirubin 149 μmol/L, direct bilirubin 103 μmol/l). IgM and IgG for CMV were positive and PCR for CMV was positive with 4750 copies/ml. CT of brain showed aplasia of right hemisphere of cerebellum, ultrasound revealed hepatosplenomegaly and ophthalmological exam showed bilateral retinal hemorrhage. Treatment with ganciclovir was initiated in fifth day of hospitalization for 6 weeks, followed by per oral therapy with valganciclovir for 6 months with significant improvement in her clinical status as well as in laboratory findings. Serological test and PCR for CMV were normal at 8 month of age. Two years follow up revealed microcephaly, she had her first words with 12 months, and she was walking with 17 months of age with discrete hemiparesis

mjeseci, dok je sa 17 već hodala uz diskretnu hemiparezu desnih ekstremiteta, sluh na desnom uhu je očuvan 30%, na lijevom uredan i ima konvergetni strabizam obostrano uz urednu vidnu oštrinu. **Zaključak:** Rana dijagnoza i terapija kongenitalne CMV infekcije obezbjeđuje značajno poboljšanje u psihomotornom razvoju zahvaćene novorođenčadi. Velike napore treba uložiti u prevenciju CMV infekcije, zbog njenog značajnog utjecaja na krajnji ishod simptomatske i asimptomatske novorođenčadi.

Ključne riječi: citomegalovirus; kongenitalna infekcija; ganciklovir

in right extremities, hearing in her right ear was preserved up to 30% while it was normal in left ear, esotropia with normal vision was evident as well. **Conclusion:** Early diagnosis and treatment of congenital cytomegalovirus infection provides an effective improvement in development of affected newborns. Great efforts should be made in the prevention of CMV infection as it continues to greatly impact the futures of both those who are symptomatic and asymptomatic at birth.

Key words: Cytomegalovirus; congenital infection; ganciclovir

LEVETIRACETAM U TERAPIJI EPILEPSIJA DJEČIJE DOBI

Sajra Užičanin, Feriha Hadžagić Ćatibušić,
Zinka Huseinbegović
Pedijatrijska klinika,
Klinički centar Univerziteta u Sarajevu
Bosna i Hercegovina

Uvod: Levetiracetam je antiepiletik nove generacije, čiji je mehanizam djelovanja vezivanje na protein sinaptičkih vezikula 2A (SV2A),čime utiče na otpuštanje neurotransmitera. Levetiracetam je indikovan kao monoterapija/pomo na terapija kod fokalnih i generalizovanih epileptičnih napada. **Cilj:** Cilj rada je klinička evaluacija efikasnosti i tolerabilnosti levetiracetama u terapiji epilepsija dječije dobi. **Pacijenti i metode:** Provedeno je kliničko istraživanje retrospektivno-prospektivnog karaktera. Relevantni podaci su prikupljani pomoću upitnika, koje su popunjavali ordinirajući ljekari. Studija je obuhvatila 104 pacijenata, 61/104 muškog i 43/104 ženskog spola. Pacijenti su imali različite tipove epileptičnih napada, koji su klasificirani kao fokalni ,generalizirani , nepoznatog porijekla, te epileptični sindromi (Lennox –Gastaut, Dravet syndro-

LEVETIRACETAM IN TREATMENT OF CHILDHOOD EPILEPSIES

Sajra Užičanin, Feriha Hadžagić-Ćatibušić,
Zinka Huseinbegović
Pediatric Clinic,
Clinical Center of University Sarajevo
Bosnia and Herzegovina

Introduction: Levetiracetam is the antiepileptic drug of new generation, which mechanism of action is attachment to synaptic vesicle 2A protein (SV2A), with consequent neurotransmitter release. Levetiracetam is indicated as monotherapy /add on therapy for focal and generalized epileptic seizures. **Objective:** The aim of the study has been clinical evaluation of efficacy and tolerability of levetiracetam in treatment of childhood epilepsies. **Patients and methods:** The clinical, retrospective-prospective study has been performed. Relevant data have been collected through the questionnaires, which have been filled in by treating physicians. The study has included 105 patients, 61/104 males and 43/104 females. The patients suffered from different types of

me). **Rezultati:** Fokalni epileptični napadi su bili prisutni kod 39/104 (37.5%) pacijenata, generalizirani epileptični napadi kod 48/104 (46.15%) generalizirane, a 17/104 (16.35) pacijenta su imali epileptične napade nepoznatog porijekla i napade u sklopu epileptičnih sindroma. Komorbiditeti su bili prisutni kod 51/104 (49%) pacijenta. Najzastupljeniji komorbiditet je cerebralna paraliza, prisutna kod 27/104 pacijenta. Efikasnost lijeka je procjenjivana minimalno 12 mj nakon započinjanja th. Kod 41/104 pacijenta je uspostavljena kompletna kontrola napada. U našoj studiji neželjeni efekti nisu primjećenini ni u jednom slučaju. **Zaključci:** Levetiracetam je efikasan i dobro podnošljiv antiepileptik u terapiji fokalnih i generaliziranih epieptičnih napada kod djece.

Ključne riječi: levetiracetam, epilepsia, dijete

epileptic seizures, which have been classified as focal, generalized, unknown onset and epileptic syndromes (Lennox-Gastaut, Dravet syndrome). **Results:** Focal epileptic seizures have been presented in 39/104 (37.5%) patients, generalized epileptic seizures in 48/104 (46.15%), while 17/104 (16.35) patients had epileptic seizures of unknown origin and epileptic syndromes. Comorbidities have been presented in 51/104 (49%) patients. The most frequent comorbidity has been cerebral palsy, with 27/104 patients. The efficacy of levetiracetam has been evaluated minimally 12 months after the initiation of treatment. Complete seizure control has been achieved in 41/104 patients. There were no cases of side effects in this study. **Conclusion:** Levetiracetam is effective and well-tolerated antiepileptic drug for focal and generalized epileptic seizures in childhood.

Key words: levetiracetam, epilepsy, child

HERPES SIMPLEX VIRUSNI ENCEPHALITIS UDRUŽEN SA AKUTNIM EPIGLOTITISOM U DVOGODIŠNJEG DJEČAKA (PRIKAZ SLUČAJA)

Evlijana Zulić[1], Devleta Hadžić[1], Šekib Umihanić[2], Humera Porobić[3], Almira Ćosićkić[1], Amela Pašić[1]
1. Klinika za dječije bolesti, JZU UKC UKC Tuzla,
2. Klinika za bolesti uha, grla, nosa, JZU UKC Tuzla,
3. Klinika za infektivne bolesti, JZU UKC Tuzla,

Uvod: Encefalitis nije čest u djece, najčešće je virusni, u 10-20% uzrokovan sa Herpes simplex virusom (HSV). Kliničke i laboratorijske osobitosti uključuju akutnu febrilnost s poremećajem svijesti, konvulzijama, pleocitozom. Promjene na CT mozga i MRI ne moraju biti upečatljive. Rutinski se dokazuje PCR metodom i jedna je

HERPES SIMPLEX VIRAL ENCEPHALITIS ASSOCIATED WITH ACUTE EPIGLOTTITIS IN A TWO-YEAR-OLD BOY (CASE REPORT)

Evlijana Zulić[1], Devleta Hadžić[1], Šekib Umihanić[2], Humera Porobić[3], Almira Ćosićkić[1], Amela Pašić[1]
[1]Clinic for Children's Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina
[2]Clinic for Ear, Nose, Throat, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina
[3] Clinic for Infectious Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Introduction: Encephalitis is not common in children, in 10-20% is caused by Herpes simplex virus. Clinical and laboratory characteristics include acute febrilitas with consciousness disorders, convulsions, pleocytosis. Computertomography (CT) and MRI changes are not

od prvih virusnih bolesti sa učinkovitim liječenjem. Letalitet neliječenih prelazi 70%. Epiglotitis predstavlja jedno od najurgentnijih stanja u pedijatriji. Češće je bakterijski, u djece uzrasta 2-5 godina. Dijagnoza je klinička, a zbog nepredvidivog toka liječenje je multidisciplinarno (pedijatar, anesteziolog, otorinolaringolog). **Prikaz slučaja:** prikazano je malo muško dijete dobi 2,2-godine sa kratkom historijom febrilnosti i akutne infekcije gornjih dišnih puteva. Uprkos liječenju dolazi do rapidnog pogoršanja zbog čega se trećeg dana bolesti prima u Pedijatrijsku intenzivnu jedinicu u vrlo teškom stanju, febrilno, somnolentno, prostrirano, respiratorno ugroženo sa izraženom inspiratornom dispnejom, znacima šoka i pozitivnim meningealnim znacima. Klinički fulminantno progredira stanje snižene svijesti, respiratorna insuficijencija i vrijednost krup skora, što potvrde prateće biohemijske i ostale pretrage. U likvoru se nađe pleocitoza uz blagu proteinorahiju i HSV IgM slabo pozitivan, a otolaringolog potvrdi bakterijski epiglotitis. Kontroolni CT mozga registruje edem moždanog stabla i cerebeluma. Dječak od starta liječen izdašnom širokospektralnom antimikrobnom uz antiviralnu terapiju, zahtijevao je hitnu intubaciju i mehaničku ventilaciju uz svu ostalu suportivnu terapiju, multidisciplinarni pristup i kompletnu obradu. Iako nije dokazan poremećen imunološki status, primio je suportivno intravenske imunoglobuline. U 8. danu odvojen je od mehaničke ventilacije, postepeno se oporavlja tako da se uz rehabilitacioni tretman završi višesedmični antibiotski režim uz potpunu normalizaciju nalaza. Otpušten je potpuno oporavljen, uz dalje praćenje. **Zaključak:** HSV encefalitis i epiglotitis u djece spadaju u hitna i životno ugrožavajuća stanja i nije uobičajena njihova zajednička prezentacija. Dobra procjena, adekvatno hitno zbrinjavanje i na vrijeme započeta antibiotska i antivirusna terapija uticala je na dobar ishod kod ovog bolesnika.

Ključne riječi: encefalitis, epiglotitis, antibiotska i antivirusna terapija

impressive. It is routinely proven by the PCR method and is one of the first viral diseases with effective treatment. Lethality of untreated exceeds 70%. Epiglottitis is one of the most urgent conditions in pediatrics. In children aged 2 to 5 years, it is caused by bacteria. Diagnosis is clinical, with the unpredictable flow, the treatment is multidisciplinary (pediatrician, anesthesiologist, otorhinolaryngologist). **Case report:** Two-year-old boy with a brief history of febrile illness and acute upper respiratory tract infection was shown. Despite the treatment, the boy came on the third day of the illness in the Pediatric Intensive Unit in severe condition, febrile, somnolent, prostrate, respiratory endangered, in shock and positive meningeal signs. Clinically, it was fulminant progression of illness, with reduced consciousness on boy, respiratory insufficiency, and positive croup score, which confirms the biochemical and other tests. Pleocitosis with mild proteinuria and HSV IgM is poorly found in liquor, and the otolaryngologist confirms bacterial epiglotitis. Control CT brain registers brain stem and cerebellum edema. The boy from the start treated with broad spectral antimicrobial, antiviral therapy, required urgent intubation and mechanical ventilation with all other supportive therapy, and multidisciplinary approach. Although not demonstrated an impaired immune status, he received supportive intravenous immunoglobulins. On day 8 he is separated from mechanical ventilation, and recovering good with rehabilitation treatment. The boy released fully recovered. **Conclusion:** HSV encephalitis and epiglottitis in children are an urgent and life-threatening condition and their common presentation is not often. Good estimate, adequate emergency care, and timely antibiotic and antiviral therapy have had a good impact on this patient.

Key words: encephalitis, epiglottitis, antibiotic and antiviral therapy

BEZBEDNOST DECE U PEDIJATRIJSKOJ JEDINICI INTENZIVNOG LEČENJA

S. Kurtović
Univerzitetska dečja klinika, Beograd, Srbija

Parametri koje je neophodno zadovoljiti za bezbednost dece su mnogobrojni, kompleksni i izuzetno zahtevni. Pedijatrijska jedinica intenzivnog lečenja smatra se sredinom visokog rizika za ugrožavanje bezbednosti pacijenata. Ukoliko nedostaje samo jedan od segmenata u reanimaciji postoji velika mogućnost da reanimacija/uspostavljanje vitalnih funkcija traje duže nego što je bezbedno za dete. Od izuzetnog značaja za bezbednost pacijenta je da se, ukoliko se neka od procedura proceni kao veliki rizik za nastanak pogoršanja stanja, ista odloži do stabilizacije stanja deteta. Jednom pravilno i uspešno plasirana linija/tubus/dren ne znači da smo trajno obezbedili dete. Terapija ne sme da se priprema rutinski (obavezna je provera svake ampule pre svakog rastvaranja leka), priprema je i primenjuje medicinska sestra sa najviše radnog iskustva u smeni. Medicinska oprema je samo pomagalo u nezi pacijenta a medicinska sestra i njena procena stanja pacijenta kroz kontinuiranu opservaciju su jedine validne do kraja, i neophodne za očuvanje bezbednosti pacijenta. Transport ne treba započinjati dok se pacijent i oprema kompletno ne pripremi, ma koliko urgentna situacija bila, jer na taj način još više ugrožavamo život deteta. Pedijatrijskoj sestri koja se zaposli u jedinici intenzivnog lečenja neophodna je dodatna obuka koja još uvek nije standardizovana i zakonom propisana na državnom nivou. U ovakvim uslovima obuka može da bude veoma naporna, stresna, nedovoljna i neadekvatna što potencijalno može da ugrozi bezbednost svakog pacijenta. Zamor medicinskog osoblja jedan je od najbitnijih faktora za ugrožavanje bezbednosti pacijenata u intenzivnim negama. Neophodno je da svi nalozi za primenu terapije i rastvora, kao i svih laboratorijskih analiza budu u pisanoj formi

CHILDREN'S SAFETY IN PEDIATRIC INTENSIVE CARE UNIT

S. Kurtović
University Children's Hospital Belgrade, Belgrade, Serbia

Parameters that need to be provided are numerous, complex and extremely demanding. The pediatric intensive care unit is considered as a high risk environment for endangering the safety of patients. If just one segment of reanimation is missing, there is a big possibility that reanimation will lasts longer than it is safe for the child. Biggest importance for patient safety during performing invasive procedures is that if one of the procedures is assessed as a high risk for the patient deterioration, the procedure need to be postponed until patient stabilization. Once correctly and successfully placed line / tubes / drains does not mean that we have permanently provided the child safety. The therapy should not be prepared routinely (each ampoule must be checked before each drug dissolves), and is prepared and applied by the Nurse with the most working experience in the shift. The medical equipment only helps in the care of the patient, but Nurse and her assessment of the patient condition, through the continuous observation, is the only valid until the end, and is necessary for the preservation of the patient's safety. Transport should not be started until the patient and the equipment are fully prepared no matter how urgent the situation is, because in this way the child's life can be even more endanger. Pediatric Nurse recruited in intensive care unit requires additional training that is not yet standardized and legally prescribed at the state level. In those conditions, training can be very stressful, insufficient and inadequate, potentially compromising the safety of each patient.Fatigue of medical staff is one of the most important factors for endangering the safety of patients in intensive care. It is necessary that all the orders for the application of

u predviđenoj dokumentaciji. Dobre međuljudske odnose koji bitno utiču na bezbednost kritično obolelih pacijenata treba ustanoviti od samog početka i negovati uporedo sa svakodnevnim procesom rada kako bi se održao kontinuitet i kvalitet.

Ključne reči: dete, bezbednost, pedijatrijska intenzivna nega

therapy and solutions, as well as all laboratory analyzes, need to be in written form in the envisaged documentation. Good interpersonal relationships that significantly affect the safety of critically ill patients should be established from the outset and nurtured alongside the daily work process in order to maintain continuity and quality.

Key words: child, safety, pediatric intensive care

AUTOLOGNA TRANSPLANTACIJA MATIĆNIM ĆELIJAMA HEMATOPOEZE KOD DJECE

S. Fatić
KCUS, Disciplina za zdravlje djeteta, Pedijatrijska klinika, Sarajevo

Uvod: Autologna transplantacija je vrsta transplantacije gdje se upotrebljavaju bolesnikove vlastite matične ćelije. Matične ćelije se sakupljaju unaprijed te se zamrznute čuvaju za upotrebu u kasnijem stadiju bolesti. Njihova je uloga da zamijene matične ćelije oštećene visokim dozama kemoterapije koja se koristi za liječenje postojeće bolesti. Hematopoetske matične ćelije su nezrele krvne ćelije koje imaju potencijal diferencijacije u sve vrste krvnih ćelija. Transplantacija hematopoetskih matičnih ćelija je široko prihvaćena terapijska opcija za liječenje raznih vrsta malignih i ne-malignih hematoloških oboljenja.Većina matičnih ćelija se nalazi udomljena u koštanoj srži i samo se vrlo mali dio nalazi u perifernoj cirkulaciji. Donedavno je koštana srž bila glavni izvor matičnih ćelija, a danas se one mogu prikupiti iz koštane srži, periferne krvi ili iz pupkovine, tako da se termin "transplantacija koštane srži" zamjenjuje terminom "transplantacija matičnim ćelijama hematopoeze". **Cilj rada:** prikazati ulogu mediciske sestre ako dio transplantacionog tima i njene uloge u zdravstvenoj njezi transplantiranog pacijenta. Infekcije

AUTOLOGICAL TRANSPLANTATION WITH MATIC CELLS OF HEMATOPOESE IN CHILDREN

S. Fatić
Pediatric Clinic, Department for Child Health Care, Clinical Center University of Sarajevo, Sarajevo, Bosnia and Herzegovina

Introduction: Autologous transplantation is a type of transplantation where the patient's own stem cells are used. They are harvested in advance and frozen are stored for use at a later stage of the disease. Their role is to replace stem cells damaged by high doses of chemotherapy used to treat the existing disease. Hematopoietic stem cells are immature blood cells that have the potential to differentiate into all types of blood vessels. Transplantation of hematopoietic stem cells is a widely accepted therapeutic option for treating various types of malignant and non-malignant hematologic diseases. Most stem cells are bred in the bone marrow, and only a very small part is found in the peripheral circulation. Until recently, the bone marrow was the main source of stem cells, and today they can be collected from bone marrow, peripheral blood, or cord, so the term "bone marrow transplantation" is replaced by the term "haemopoietic stem cell transplantation". **Objective:** To show the role of a nurse if part of the transplant team and

predstavljaju jedan od najčešćih uzroka mortaliteta kod hematoloških bolesnika. Primjena visokih doza citostatika, kortikosteroida, iradijacije uvodi ih u stanje imunodeficijencije te povećava rizik od nastanka dodatnih komplikacija. Epidemiologija infekcija u hematoloških pacijenta se intenzivno mijenja, a posebnu osjetljivost na to imaju pacijenti nakon transplantacije matičnih ćelija hematopoeze. **Zaključak:** Zdravstvena njega hematološkog bolesnika i oboljelih od malignoma, danas je kompleksan proces. Sprečavanje infekcija, sprečavanje krvarenja i anemije, sprečavanje mučnina i povraćanja prije i za vrijeme kemoterapije, održavanje cjelovitosti kože, održavanje netaknute membrane sluznice, održavanje tjelesne težine unutar 10% od prije tretmanske težine, olakšanje boli i nelagodnosti. Zadaća medicinske sestre jeste posmatrati bolesnika i utvrditi činjenice koje mogu uzrokovati niz komplikacija, te biti upućena u protokol liječenja, pripreme, aplikacije kemoterapije i autologne transplantacije.

Ključne riječi: autologna transplantacija, matične ćelijehematopoeze, medicinska sestra, infekcije

its role in the care of a transplanted patient. Infections are one of the most common causes of mortality in haematological patients. The use of high doses of cytostatics, corticosteroids, irradiation leads them to the state of immunodeficiency and increases the risk of additional complications. The epidemiology of infections in hematologic patients is intensively changing, and special sensitivity to this has patients after transplantation of stem cell. **Conclusion:** Health care of hematologic patients and malignant patients is a complex process today. Preventing infections, preventing bleeding and anemia, preventing nausea and vomiting before and during chemotherapy, maintaining skin integrity, maintaining intact mucous membranes, maintaining body weight within 10% of pre-treatment weight, relieving pain and discomfort. The task of a nurse is to observe the patient and identify facts that can cause a number of complications, and be referred to the protocol of treatment, preparation, chemotherapy and autologous transplantation.

Keywords: autologous transplantation, hematopoietic stem cells, nurse, infections

ZNAČAJ TILT TABLE TESTA U PEDIJATRIJSKOJ PRAKSI

A. Hadžić, E. Kundo, M. Kadrić
Pedijatrijska klinika KCU Sarajevo, Bosna i Hercegovina

Tilt table test /head up je značajna neinvazivna metoda u svakodnevnoj kardiopedijatrijskoj i neuropedijatrijskoj dijagnostici. Najpouzdaniji test je u dijagnostici vazovagalne sinkope, a trebao bi se primjenjivati uglavnom samo u slučaju nejasne etiologije sinkopa. Tilt table test /head up na Pedijatrijskoj klinici Kliničkog centra Univerziteta u Sarajevu se radi od 2008 godine. Do sada je realizirano ukupno 732 tilt table testova sa head up-om od

IMPORTANT TILT TABLE TEST IN PEDIATRIC PRACTICE

A. Hadžić, E. Kundo, M. Kadrić
Pediatric Clinic, Clinical Center University of Sarajevo, Sarajevo, Bosnia and Herzegovina

Tilt table test / head up is a significant non-invasive method in everyday cardiopaediatric and neuropediatric diagnosis. The most reliable test is in the diagnosis of vasovagal syncope, and should be used mainly in the case of an unclear etiology of syncope. Tilt table test / head up at the Pediatric Clinic of the Clinical Center of the University of Sarajevo has been working since 2008. So far, a total of 732 tilt table tests have been completed with head up,

toga njih 394 (63.7%) su bili pozitivni nalazi dok je ostalih 224 (36.3 %) zahtjevalo dodatnu obradu. Obuhvaćeni su bili pacijenti sa sinkopama i /ili sumnjama na sinkopu, tranzitornim poremećajima svjesti, sumnjama na epilepsiju, pacijenti sa vertigom, aritmijama, operisanim srčanim anomalijama, glavobolјama. Relativno mali broj (ispod 5%) je bio ponavljanih testova. Tehnika izvođenja tilt table testa je podrazumjevala potpis pristanka uz predočenje rizika i opasnosti kod izvođenja testa, dobro dokumentovanu kardiološku i neurpedijatrijsku obradu, antišok terapiju uz defibrilator te kontinuirano praćenje vitalnih parametara (TA, P, SpO2, EKG). Mada je sinkopa u principu benigni kratkotrajni poremećaj cerebralne cirkulacije sa iznenadnim gubitkom svijesti, zahtjevna je metoda i taži dobru pripremu kako pacijenta tako i osoblja.

Ključne riječi: tilt table test, rezultati, tehnika izvođenja

of which 394 (63.7%) were positive, while the other 224 (36.3%) required additional processing. Patients with syncope and / or suspicion of syncope, transient disorders of consciousness, epilepsy, patients with vertigo, arrhythmias, operated cardiac anomalies, headaches were included. A relatively small number (below 5%) was repeated tests. The technique of carrying out the tilt table test included the signature of the consent with the presentation of risk and dangers in the performance of the test, well-documented cardiological and neuropediatric treatment, antisoke therapy with defibrillator and continuous monitoring of vital parameters (TA, P, SpO2, ECG). Although syncope is in principle a benign short-term disorder of cerebral circulation with sudden loss of consciousness, it is a demanding method and suits good preparation for both the patient and the staff.

Keywords: tilt table test, results, performance technique

PRIMJENA CPAP-a NA ODJELJENJU INTENZIVNE TERAP

A. Nezirević
KCUS, Disciplina za zdravlje djeteta–Pedijatrijska klinika Sarajevo

Uvod: CPAP (kontinuirani pozitivni pritisak) se primjenjuje kod nedonoščadi sa rds –om koja spontano dišu, kako bi se pozitivnim pritiskom zadržale alveole otvorenim i povećao rezidualni volumen pluća. **Cilj rada:** CPAP se primjenjuje i kod nedonošćadi sa apnoičnim pauzama, poslije odvajanja od respiratora, te kod neonatusa sa tranzitornom tahipneom da bi se smanjio respiratorni rad. Moguće nus pojave su pneumotoraks, plućna hemoragija, gastrična distenzija, koja može uzrokovati poteškoće hranjenja. Kod primjene CPAP-a

CPAP TREATMENT IN NICU

A. Nezirević
Pediatric Clinic, Department for Child Health Care, Clinical Center University of Sarajevo, Sarajevo, Bosnia and Herzegovina

Introduction: CPAP (continuous positive pressure) is used for premature babies with rds who are spontaneously breathing to keep alveoli open and to increase the residual volume. **Objective of going:** Also it is effective for premies with apneas, for newborns with transient tachypnea and after ventilator weaning to reduce respiratory work. In addition CPAP reduces the need for surfactant administration and increases survival. The possible adverse reactions are air leak syndrome, pulmonary haemorrhage, gastric distention and feeding difficulties. Sufficient care needs to be carried

važno je provesti adekvatnu njegu; odabrati kape, nosne nastavke ili masku odgovarajuće veličine, obezbjediti da nazalni nastavci ne budu čvrsto priljubljeni uz nos da se spriječi oštećenje hrskavice nosnog septuma ili erozija kože. Potrebno je mijenjati maske ili nazalne nastavke svakih par sati, te vršiti aspiracije nosa i usta. U periodu od januara 2011 do augusta 2013 (32 mjeseca), kod 349 pacijenta sa RDS-om primjenjen je CPAP (prosječna dužina tretmana 2,6 dana). Od 349, 183(52,4 %) pacijenata je zahtjevalo primjenu surfaktanta (1-4 doze), 101 pacijent (28,9%) antenatalno je primio kortikosteroid. 62 (18%), pacijenata je imalo pneumotorax. **Zaključak:** primjenom CPAP-a poboljašano je preživljavanje naročito nedonočadi niskih gestacija, te je smanjena potreba za primjenom surfaktanta.

Ključne riječi: NCPAP, nedonošče, RDS

out. Adequate cap, mask and nasal prongs size needs to be used, nasal prongs must not be too tightly placed on the nose in order to prevent the injury of the nasal bridge cartilage and skin erosions. The frequent change of masks or nasal prongs, every few hours is necessary as well as the aspiration of nose and mouth. In the period of January 2011 – August 2013 (32months), 349 patients (22W.G.-36 W.G.) with RDS were treated by CPAP (average duration 2,6 days). Surfactant (1 to 4 doses) was administered to 183 patients (52, 4%), 101 (28, 9%) received antenatal corticosteroids. 27(18%) developed air leak syndrome. **Conclusion:** CPAP treatment increases the survival rate especially elbw and decreases the need for surfactant administration.

Keywords: NCPAP, premature, RDS

ENDOTRAHEALNA APLIKACIJA SURFAKTANTA

M. Ajdinović
KCUS , Disciplina za zdravlje djeteta–Pedijatrijska klinika Sarajevo

Uvod: surfaktant je lipidno proteinski kompleks koji prekriva površinu alveola, sprečava njihovo kolabiranje i nastanak atelektaze. 1950 god. Avery i Mead su otkrili uzrok RDS-a, a 1980 egzogeni surfaktnt je prvi put bio primjenjen u Japanu. Devedesetih godina prošlog vijeka dolazi do šire upotrebe surfaktanta. **Cilj rada:** na našem odjeljenu surfaktant se počeo primjenjivati od 2000 godine. Terapijska primjena surfaktanta kod prematurusa može biti profilaktička, kada se surfaktant primjenjuje neposredno po rođenju u porođajnoj sali ili kod već razvijene kliničke slike kao terapija "spasa". Ako se daje unutar prva 2 sata života onda se govori o ranoj primjeni.Prije primjene surfaktanta potrebno provjeri pozicija tubusa

ENDOTRACHEAL SURFACTANT ADMINISTRATION

M. Ajdinović
Pediatric Clinic, Department for Child Health Care, Clinical Center University of Sarajevo, Sarajevo, Bosnia and Herzegovina

Introduction: surfactant is a complex of lipids and proteins which covers alveolar surface, preventing alveolar colapsand athelectasis formation. After the discovery byAvery and Mead what causes RDS 1950 and after it was administration for the first time in Japan 1980, 1990 mass use of surfactant has begun. **Objective of going:** surfactant treatment has been introduced in our department 2000. Surfactant can be given right after birth Insure) method, or as a therapy of „rescue" when the symptoms of RDS had already begun. Early administration is considered when it is applied in the first 2 hours of life. Before administration of surfactant and after intubation the po-

na urađenom RTG-u. Davanje surfaktanta je sterilna procedura. Po zagrijavanju, aspirirati sterilnom špricom i iglom određenu količinu (4 ml/kg ako dajete Survantu), pozicionirati, te dekonektovati pacijenta sa respiratora i dati ¼ doze kroz kateter koji je plasiran kroz endotrahealni tubus u svaki kvadrant pluća uz mjenjanje pozicije pacijenta. Poslije svakog davanja u pojedinačne kvadrante potrebno je manuelno ventilirati 30 sekundi. U slučaju pada saturacije prekinuti aplikaciju do stabilizacije.Nakon aplikacije kontrolirati acidobazni status, smanjivati respiratornu potporu, ako to stanje pacijenta dozvoljava (FiO2 ako je veći od 40%, a zatim insp pritisak, prema vrijednosti saturacije kisikom i pO2, te broj respiracija u zavisnosti od pCO2). Moguće komplikacije su obstrukcija disajnih puteva, stimulacija vagusa, nejednaka distribucija surfaktanta kod neadekvatne pozicije endotrahealnog tubusa, pneumotoraks, plućna hemoragija. **Prikaz slučaja:** žensko nedonošće (27 N.G., tjelesne težine 860 gr, drugi blizanac) primljena u prvom satu života, intubirana, data doza surfaktanta. Nakon 24 sata ekstubirana i postavljena na CPAP. Šesti dan bez CPAP-a, dobrog opšteg stanja. **Zaključak:** aplikacija surfaktanta je jednostavna, ali se mora pažljivo izvoditi, nus pojave su rjetke a efekti su značajno skraćivanje respiratorne potpore i poboljšavanje preživljavanja.

Ključne riječi: surfaktant, prematurus, sterilno

sition of the tube should be checked on chest x ray. It s administration is a sterile procedure. After heating, the recommended dose is aspirated by sterile needle and syringe, (4 ml/kg if Survanta is applied), patient is positioned and disconnected from the ventilator and ¼ of overall quantity is applied through catheter which is placed in the endotracheal tube, in each lung quadrant, changing the position of the patient. After each in every quadrant patient is venti lated manually for 30 seconds. In the case that oxygen saturation is still not adequate the procedure should be discontinued until stabilization. After administration, AB status is taken and accordingly ventilator support is reduced, firstly FiO2 if more than 40% and then inspiratory pressure. Adverse effects include airways obstruction, vagal stimulation, and unequal surfactant distribution when endotracheal tube position is not correct,pneumothorax, pulmonary hemorrhage. **Brief case report:** Baby girl, 27 W.G , birth weight 860 gr, second twin is admitted just after the birth. After intubation 1 dose of Surfactant was given and following ventilation for 24 hours, she was placed on CPAP. On her 6 th day of life she was without any respiratory support and was doing well. **Conclusion:** surfactant can reduce the duration of respiratory support, adverse effects are rare, its administration is simple , but it is needed to be cautiously done.

Keywords: surfactant, cpap, aseptically

24-SATNI EKG MONITORING U DJECE U HOSPITALNIM USLOVIMA

B. Antić, H. Begić, R. Šiljegović, M. Spahić,
JZU UKC Tuzla, Klinika za dječije bolesti

24-satni EKG (Holter) monitoring je metoda registrovanja promjene električnog potencijala srca u toku 24 sata (kontinuirano snima-

24-HOUR ECG CHILDREN MONITORING IN HOSPITAL CONDITIONS

B. Antić, H. Begić, R. Šiljegović, M. Spahić,
Clinic for Children's Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

24-hour ECG (Holter) monitoring is a method of registering a change in the electrical

nje EKG-a na magnetnu traku). Indikaciju za holter monitoring postavlja ljekar specijalista pedijatar – kardiolog, a medicinska sestra vrši pripremu pacijenta za ovu pretragu. **Cilj rada** je prikazati specifičnost i značaj adekvatnog pristupa i pripreme djeteta za holter monitoring, prikazati broj hospitaliziranih pacijenata prema spolu i starosnoj strukturi. **Materijal i metode:** Urađena je retrospektivna analiza sestrinske dokumentacije i bolničkog protokola Odjeljenja za pulmologiju i kardiologiju Klinike za dječije bolesti. Analizirani su podaci u periodu od 01.01.2013 do 31.12.2017 godine. **Rezultati:** U analiziranom vremenskom periodu na Odjeljenju za pulmologiju i kardiologiju hospitalizirano je ukupno 214 djece sa kardiološkim smetnjama. U 46 djece odnosno 21,5% (15 ženskog - 32,6% i 31 muškog spola – 67,4 %) je postavljena indikacija i urađen 24 satni EKG monitoring. **Zaključak:** Holter monitoring je neinvazivna metoda koja se koristi u svrhu dijagnosticiranja poremećaja srčanog ritma i poremećaja provođenja impulsa. Iako se najčešče radi o vanbolničkoj dijagnostičkoj metodi, u određenog broja djece se radi u toku hospitalizacije. Ova činjenica upućuje na neophodnost edukacije stručnog kadra za adekvatnu pripremu pacijenata i roditelja, planiranja dnevnog fizičkog opterećenja, praćenje pacijenata i vođenje dnevnika.

Ključne riječi: Djeca, EKG (Holter) monitoring, poremećaji srčanog ritma.

potential of the heart for 24 hours (continuous ECG recording on a magnetic tape). The holter monitoring indication is set by the specialist pediatrician - cardiologist, and the nurse prepares the patient for this examination. **Golas:** To show the specificity and importance of adequate approach and preparation of a holter monitoring in children, to show the number of hospitalized patients by gendre and age structure. **Materials and methods:** A retrospective analysis of nursing documentation and hospital protocols of the Department of Pulmology and Cardiology of the Clinic for Children's Diseases was done. Data were analyzed in the period from January 1, 2013 to December 12, 2017. **Results:** In the analyzed time period, a total of 214 children with cardiac disorders were hospitalized at the Department of pulmonology and cardiology. An indication was set to 46 children or 21,5% (15 female - 32,6% and 31 male – 67,4 %) and 24-hour ECG monitoring was performed. **Conclusion:** Holter monitoring is a non-invasive method used to diagnose heart rhythm disorders and pulse impairment disorders. Although this is non-hospital diagnostic method, in a certain number of children is being done during hospitalization. This fact points to the necessity of educating professional staff for adequate preparation of patients and parents, planning daily physical load, monitoring patients and keeping diaries.

Key words: Children, ECG (Holter) monitoring, Heart rhythm disorders

PRIMJENA PORTA KOD DJECE OBOLJELE OD MALIGNIH BOLESTI

H. Cocalić, M. Šabić, S. Mašnić
KCUS, Disciplina za zdravlje djece – Pedijatrijska klinika Sarajevo

Uvod: Port je tačnije poznat kao "totally implantable venous access device" - "potpuno implantabilni venski pristupni uređaj". Port je sistem koji se postavlja ispod kože, a sastoji se od komorice i katetera. Komorica se ugrađuje ispod kože grudnog koša i spojena je sa tankom kateterskom cjevčicom koja se postavlja u veliku venu ispod ključne kosti . Tokom liječenja maligne bolesti, veoma često je potrebno obezbjediti venski put radi davanja kemoterapije, infuzija, antibiotika i transfuzije krvi. Ukoliko se radi o vremenski dugotrajnoj kemoterapiji, odnosno većem broju ciklusa kemoterapije, tokom vremena se vene oštećuju do te mjere da je davanje kemo ili bilo kakve druge terapije preko perifernih vena ruku i nogu praktično nemoguće. **Cilj:** je da se omogući oboljelima od malignih bolesti, koji primaju kemoterapiju, da istu prime kroz portove, jer je dokazano da je ta metoda psihički i fizički mnogo lakša za pacijenta, a medicinska istraživanja nalažu da je na taj način administrirana kemoterapija i učinkovitija u procesu liječenja. Pronalaženje vena kod pacijenata sa kemoterapijom često je problematično, jer postoji ograničen broj sudova u korpusu i nogama. **Zaključak:** Silikonska membrane na komorici porta se može ubosti nekoliko hiljada puta te je trajanje porta praktično neograničeno osim ukoliko ne dođe do nekih komplikacija tokom njegove upotrebe koje zahtevaju njegovo odstranjenje. Doktori i medicinske sestre mogu vrlo lako pristupiti portu tako da pacijent ne mora da bude boden iglama na različim mjestima da bi pronašli odgovarajuću venu. Port u značajnoj mjeri poboljšava kvalitet života pacijenta. Pacijenti koji primaju kemioterapi-

THE APPLICATION OF THE DOOR TO CHILDREN SUFFERING FROM MALIGNANT DISEASES

H. Cocalić, M. Šabić, S. Mašnić
Pediatric Clinic, Department for Child Health Care, Clinical Center University of Sarajevo, Sarajevo, Bosnia and Herzegovina

Objective: The port is more precisely known as "totally implantable venous access device" - "a fully implantable vein access device". Port is a system that is placed under the skin, and consists of chambers and catheters. The chick is embedded under the skin of the chest and is connected to a thin catheter tube that is placed in a large vein beneath the key bone. During the treatment of malignant disease, it is often necessary to provide a venous route for the delivery of chemotherapy, infusions, antibiotics and blood transfusions. In case of time-delayed chemotherapy, or a greater number of chemotherapy cycles, over time, veins are damaged to the extent that giving chemotherapy or any other therapy through the peripheral veins of the arm and leg is practically impossible. **The goal** is to enable patients with malignant diseases receiving chemotherapy to receive it through the ports, because it has been proven that this method is psychologically and physically much easier for the patient, and medical research suggests that chemotherapy is administered in this way and is more effective in the treatment process. Finding veins in patients with chemotherapy is often problematic, as there are a limited number of courts in the corpus and legs. **Conclusion:** Silicone membranes on the port compartment can be stuck several thousand times and the duration of the port is practically unlimited unless there are some complications during its use that require its removal. Doctors and nurses can access the port very easily so that the patient does not need to be needled with needles in different

ju na ovaj način prvenstveno štite svoje vene.

Klučne riječi: port , maligne bolesti , kemotaerapija

places to find the appropriate vein. The port significantly improves the quality of life of the patient. Patients receiving chemotherapy in this way primarily protect their veins.

Key words: port, malignant diseases, chemotherapy

ZDRAVSTVENA NJEGA DJECE OBOLJELE OD DIJABETES MELITUSA

A. Čačković, M. Jahić
JZU UKC Klinika za dječije bolesti Tuzla

Dijabetes melitus je hronični poremećaj koji zbog nedovoljne sekrecije inzulina ili njegova nedostatnog učinka dovodi do hiperglikemije. U djece, kao i odraslih, poremećen je energetski metabolizam ne samo ugljikohidrata nego i masti i bjelančevina. U dječijoj dobi dijabetes melitus tip1 (juvenilni diabetes ili šećerna bolest ovisna o inzulinu) je najčešći oblik dijabetesa i nastaje kao posljedica autoimunih procesa u organizmu. Dijabetes melitus tip1 jedna je od najčešćih hroničnih bolesti u djece, a učestalost tog oblika dijabetesa i dalje značajno raste. Zbog doživotnog trajanja bolesti, dinamičnosti metabolizma i specifičnog psihičkog razvoja u periodu odrastanja, terapija dijabetes melitusa tipa 1 koju ima 90-95% oboljele djece je vrlo kompleksna. Osnovni cilj terapije je dobra metabolička kontrola, izbjeći ili barem odgoditi mikro i makrovaskularne komplikacije bolesti i postići dobru kvalitetu života. Pristup djetetu sa dijabetes melitusom mora biti individualan. Medicinska sestra-tehničar edukuju roditelje i djecu kod kojih se primjenjuje inzulinska terapija.Primarni zadatak je edukacija koja započinje već pri prvoj hospitalizaciji. Edukacija roditelja i djece obuhvata: mjerenje glikemije, pravilno apliciranje inzulina, izračunavanje ugljikohidrata u obroku, prepoznavanje simptoma hipoglikemije i hiperglikemije kao i reagovanje kod iste, značaj tjelesne aktivnosti, a sve u cilju sprečavanja ne-

HEALTH CARE OF CHILDREN DISEASED FROM DIABETES MELLITUS

A. Čačković, M. Jahić
Clinic for Children's Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Diabetes mellitus is a chronical disorder which because of insufficient secretion of insulin or his insufficient effect leads to hyperglycaemia. Among children, and adults, energy metabolism is disrupted, not only in carbohydrates but also in fat and protein. In child ages, diabetes mellitus type 1 (juvenile diabetes or insulin dependent diabetes) is the most common form of diabetes and is the result of autoimmune processes in the body. Diabetes mellitus type 1 is one of the most common chronic diseases among children, and the frequency of this type of diabetes continues to increase significantly. Due to the life-span of the disease, the dynamics of metabolism and specific psychological development in the growing period, the terapy of type 1 diabetes mellitus which 90-95% of the children recieve is very complex. The main goal of the therapy is good metabolic control, avoiding or at least delaying micro and macrovascular complications of the disease and achieving good life quality. Approach to a child with diabetes mellitus must be individual. A nurse, or a medical technician educates parents and children with insulin therapy. The primary task is education that begins with the first hospitalization. Parents and children education includes: glycaemia measurement, proper insulin application, calculating carbohydrates in a meal, recognition of hypoglycae-

željenih efekata i komplikacija koje nosi dijabetes. Uz kontinuiranu edukaciju i dobru kontrolu bolesti, djeca sa dijabetesom mogu rasti i razvijati se kao i njihovi vršnjaci. U većine naših pacijenata edukacija je vrlo uspješna što je potvrđeno sposobnošću djece i roditelja da probleme sa inzulinskom terapijom u velikom broju otklone sami, sa lakoćom izračunavaju količinu ugljenih hidrata u obroku, uz registrovanu dobru metaboličku kontrolu bolesti na redovnim ambulantnim kontrolama.

Ključne riječi: dijabetes melitus, zdravstvena njega, kontinuirana edukacija

mia and hyperglycaemia symptoms, as well as the reaction to hypo and hypergycaemia, the importance of physical activity, all with a goal of preventing undesirable effects and diabetes related complications. With continuous education and good control of the disease, children with diabetes can grow and develop like their peers. With the most of our patients, education is very successful which is confirmed by the ability of children and parents to eliminate the problems with insulin therapy in a large number by themselves, they easily calculate the amount of carbohydrates in a meal, with a registered good metabolic disease control at regular control appointments.

Key words: diabetes mellitus, health care, continuous education

IMUNIZACIJA PROTIV RESPIRATORNIH SINCICIJALNIH VIRUSNIH INFEKCIJA

A. Čikarić, S. Salkanović-Delibegović, Dž. Ostrvica, A. Zubčević
JZU UKC Tuzla, Klinika za dječije bolesti

Respiratorni sincicijalni virus (RSV) je čest uzročnik akutnih infekcija respiratornih puteva. Ugrožene grupe su prijevremeno rođena djeca, djeca sa urođenim anomalijama srca (UAS), nakon hirurških korekcija kompleksnih UAS, teškom i srednje teškom plućnom hipertenzijom, teškom kardiomiopatijom, bronhopulmonalnom displazijom i djeca sa imunodeficijentnim stanjima. Klinička slika bolesti varira od blage infekcije gornjih respiratornih puteva u djece starije od 2 godine do teških bronhopneumonija u mlađe djece, često sa letalnim ishodom u rizičnim kategorijama. U epidemijskim razmjerama RSV infekcija se javlja tokom zimskih mjeseci kada se provodi profilaksa koja je prvenstveno usmjerena na rizične grupe. **Ciljevi rada:** Analizirati najče-

RESPIRATORY SYNCYTIAL VIRUS INFECTION

A. Čikarić, S. Salkanović-Delibegović, Dž. Ostrvica, A. Zubčević
Clinic for Children's Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Respiratory syncytial virus (RSV) is a common cause of acute respiratory tract infections. Endangered groups are children with congenital heart anomalies (UASs), complex UASs, severe and moderate-severe pulmonary hypertension, severe cardiomyopathy, bronchopulmonary dysplasia, premature babies and children with immunodeficiency states. The clinical picture of the disease varies from a mild upper respiratory infection in children older than 2 years to severe bronchopneumonia in younger children, often with a flight outcome in risk categories. In epidemic proportions, RSV infection occurs during the winter months when a prophylaxis is carried out primarily targeting risk groups. **Goals:** Analyze the most common indications for the RSV infection prophylaxis, display the number

šće indikacije za profilaksu RSV infekcije, prikazati broj apliciranih doza i proceduru aplikacije. **Materijal i metode:** Urađena je retrospektivna analiza protokola bolesnika Dnevne bolnice i baze podataka od sezone 2008/2009. godina do sezone 2016/2017. godina. **Rezultati:** U posmatranom vremenskom periodu u Dnevnoj bolnici apliciran je Palivizumab 301 dijetetu, od čega je 139(46,1%) djece sa UAS, 151(50,1%) prijevremeno rođene dijete i 11(3,65%) djece zbog drugih indikacija. Palivizumab se aplicira intramuskularno u dozi 15 mg/kg tjelesne težine, a u analiziranih 9 sezona aplicirano je 1112 doza. Zabilježen je značajno manji broj hospitalizacija ovih pacijenata zbog respiratornih smetnji. **Zaključak:** Palivizumab predstavlja specifičan vid pasivne imunizacije protiv RSV infekcije kod definisanih visokorizičnih grupacija djece. Rezultati pokazuju da su najčešće indikacije za primjenu Palivizumab-a prematurusi (151) i djeca sa UAS (139), dok je od drugih indikacija za primjenu Palivizumab bilo svega 11 djece. Palivizumab se aplicira u mišić, najčešće u vanjski dio bedra. U posmatranom periodu nije bilo nus-pojava.

Ključne riječi: Rizične skupine djece, Palivizumab, RSV infekcija

of doses administered and the procedure of the application. **Materials and methods:** A retrospective analysis of the One Day Clinic and database protocols from the 2008/2009 season until the 2016/2017 season has been done. **Results:** During the time period in the One Day Clinic, Palivizumab was administered to 301 children, of which 139 (46.1%) were children with UAS, 151 (50.1%) were prematurely born and 11 (3.65%) children due to others indication. Palivizumab is administered intramuscularly at a dose of 15 mg/kg body weight. In the analyzed 9 seasons, 1112 doses have been administered. A significantly lower number of hospitalized patients due to respiratory disturbances was noted. **Conclusion:** Palivizumab represents a specific form of passive immunization against RSV infection in defined high-risk groups of children. The results show that the most common indications for the use of Palivizumab are premature children (151) and children with UAS (139), while other indications for the use of Palivizumab are only 11 children. Palivizumab is applied to the muscle, most often in the outer part of the thigh. In the observed period, there were no side effects

Keywords: Risk groups of children, Palivizumab, RSV infection

ZDRAVSTVENA NJEGA NOVOROĐENČADI SA RESPIRATORNIM DISTRES SINDROMOM

M. Ćurčić, I. Stjepić, D. Hadžić, H. Sejdin
JZU UKC Tuzla, Klinika za dječije bolesti

Način zbrinjavanja i liječenje respiratornog distres sindroma (RDS-a) kod prijevremeno rođene djece revidiran je prema Europskim smjernicama u 2013. godini. RDS se razvija kod novorođenčadi kao posljedica manjka surfaktanta u plućima. Plućni surfaktant je

HEALTH CARE IN NEWBORNS WITH RESPIRATORY DISTRES SYNDROME

M. Ćurčić, I. Stjepić, D. Hadžić, H. Sejdin
Clinic for Children's Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

The method of treating respiratory distress syndrome (RDS) in preterm infants was revised according to European guidelines in 2013. RDS develops in newborns due to a lack of surfactant in the lungs. Pulmonary surfactant is a mixture of phospholipids and

mješavina fosfolipida i lipoproteina koju luče pneumociti tipa II. Smanjuje površinsku napetost sloja vode koji oblaže alveole, smanjujući na taj način sklonost alveola kolapsu i rad potreban za njihovo otvaranje. Opasnost od sindroma respiratornog distresa se povećava što je gestacija kraća. **Cilj rada:** Prikazati tretman i značaj aplikacije surfaktanta kod novorođenčadi sa RDS-om te način sprovođenja zdravstvene njege u intubaciji, reanimaciji i pravilnoj aplikaciji surfaktanta u određenim položajima tijela. **Materijal i metode:** Urađena je retrospektivna analiza podataka iz istorija bolesti, sestrinske dokumentacije i protokola pacijenata na Odjeljenju za intenzivnu terapiju i njegu Klinike za dječije bolesti, u periodu od 01.01.2016-31.12.2017 godine. **Rezultati:** U analiziranom vremenskom periodu u Odjeljenju za intenzivnu terapiju i njegu hospitalizirano je 839 pacijenata, od toga 743 (62,3%) novorođenčadi. Od ukupnog broja novorođenčadi 551 (74.1%) je hospitalizirano pod dijagnozom RDS i u okviru tretmana zahtijevalo intubaciju i aplikaciju surfaktanta. Ostalih 192 (25.8%) su novorođenčad primljena sa drugom dijagnozom. Od novorođenčadi sa RDS-om 433 (78.5%) je rođeno prije 37 GN, a 118 (21.4%) poslije 37 GN. **Zaključak:** U kliničkoj praksi sprovodi se intratrahealna primjena surfaktanta za koju je potrebna endotrahealna intubacija. Zdravstvena njega novorođenčadi zahtijeva visok nivo znanja i educiranost kompletnog medicinskog osoblja, kao i znanje o opremi i invazivnim procedurama. Medicinske sestre stručnim i savjesnim radom znatno mogu doprinijeti smanjenju rizika od nastanka komplikacija i kraćem boravku pacijenta u bolnici.

Ključne riječi: RDS, zdravstvena njega, primjena surfaktanta

lipoproteins secreted by type II pneumococci. It reduces the surface tension the water layer that coats the alveoli, thereby reducing the inclination of their collapse and the work needed to open them. The risk of respiratory distress syndrome increases with shorter gestation. **Goal:** To show the treatment and significance of surfactant application in newborns with RDS and the way of performing health care in intubation, reanimation and proper addition of surfactant in certain positions of the body. **Material and Methodes:** A retrospective analysis of data from the history of the disease, nursing documentation and patient protocols at the Department of Intensive Care of the Clinic for Children's Diseases was done in the period from 01.01.2016-31.12.2017. **Results:** In the analyzed time period, 839 patients were hospitalized in the Intensive Care Unit, of which there were 743 (62.3%) newborns. Out of the total number of newborns, 551 (74.1%) were hospitalized under the diagnosis of RDS and required intubation and application of surfactant within the agreed treatment. The remaining 192 (25.8%) newborns were admitted with another diagnosis. Of newborns with RDS, 433 (78.5%) were born before 37 GN and 118 (21.4%) after 37 GN. **Conclusion:** In clinical practice, intra tracheal application of surfactant is required for which endotracheal intubation is required. Nursing care requires a high level of knowledge and education of complete medical personnel, as well as knowledge of equipment and invasive procedures. Nurses with professional and conscientious work can significantly contribute to reducing the risk of complications and shorter patient admission in the hospital.

Key words: RDS, Health care, admission of surfactants

ZDRAVSTVENA NJEGA DJETETA U TOKU CITOSTATSKE TERAPIJE

S.Dervišević, A. Latifagić, A. Zubčević, I. Đapo, S. Ivanov, R. Memić
JZU UKC Klinika za dječije bolesti Tuzla

Citostatska terapija (hemoterapija) je vrlo složen oblik terapije koja se koristi u liječenju bolesnika s malignim tumorima, nije bezopasna za samog bolesnika kao ni za osoblje koje primjenjuje citoterapeutike. Najčešće maligne bolesti su leukemije i limfomi koji se javljaju kod 45% djece uzrasta do 15 godina, te solidni maligni tumori 55%. **Ciljevi rada:** Prikazati broj pacijenata na citostatskoj terapiji u periodu 01.01.2017-31.12.2017godine u JZU UKC Tuzla, Klinika za dječije bolesti, Odjeljenje hematologije i onkologije, te prikazati specifičnost planiranja i sprovođenja Procesa zdravstvene njege kroz sestrinsku dokumentaciju. **Materijal i metode:** Urađena je retrospektivna analiza protokola bolesnika Odjeljenja hematologije i onkologije, te istorija bolesti i sestrinske dokumentacije. **Rezultati:** U posmatranom vremenskom periodu hospitalizirano je ukupno 170 djece, od tog broja 18 su novootkriveni pacijenti sa malignim oboljenjem. Kod 10 djece je aplicirana citostatska terapija po Protokolima za maligne bolesti dječije dobi (5 djece bilo ženskog spola (50%), i 5 djece muškog spola (50%). Hemoblastoza je bilo ukupno 6 (4 Akutne limfatične leukemije, 1 Morbus Hodgkin i 1 Morbus Non Hodgkin), solidnih tumora je bilo 4 (1 Neuroblastom, 1 Ostreosarkom, 1 Sinovijalni sarkom, 1 tumor mozga (PHD: PNET). Prema uzrastu od 0-3,9 godine bio je 1 pacijent, u dobi od 4-6,9 godina je bio 1 pacijent, u uzrastu od 7-9,9 godina 3 pacijenta i u dobi od 10-15 godina je bilo 5 pacijenata. **Zaključak:** Sprovođenje hemoterapije je odgovoran zadatak koji zahtijeva timski pristup, brižljiv i stalan nadzor pacijenta. Medicinska sestra mora poznavati neželjene pojave različitih citostatika i blagovremeno intervenisati. Psiho-

HEALTH CARE OF CHILDREN DURING CHEMOTHERAPY

S.Dervišević, A. Latifagić, A. Zubčević, I. Đapo, S. Ivanov, R. Memić
Clinic for Children's Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Cytostatic therapy (chemotherapy) is a very complex form of therapy used in the treatment of patients with malignant tumors, and is not harmless to the patient as well as to chemotherapy staff. Most common malignant diseases are leukemia and lymphoma occurring in 45% of children up to 15 years old, and solid malignant tumors 55%. **Aims:** To present the number of patients on cytostatic therapy in the period from 01 January-3 December 2017, at UKC Tuzla, Children's Hospital, Department of Hematology and Oncology, and to show the specificity of planning and implementation of the Nursing Care Process through nursing documentation. **Materials and Methods:** A retrospective patient protocol analysis was performed for the Department of Hematology and Oncology as well as analysis of medical history and nurse documentation. **Results:** In the observed period, 170 children were hospitalized, of which 18 new patient with malignancy. 10 children were on cytostatic therapies, of which 5 were female (50%) and 5 male (50%). There were 6 patients with Hemoblastosis (of which 4 Acute Lymphatic Leukemia, 1 Morbus Hodgkin and 1 Morbus Non Hodgkin), there were 4 patients with solid tumors of wich (1 Neuroblastoma, 1, Osteosarcoma, 1 Sinovial Sarcoma, 1 tumor of the brain (PHD: PNET) According to age of patients there was 1 patient aged 0-4, 1 patient aged 4-7, 3 patients aged 7-10 and 5 patients aged 10-15. **Conclusion:** Carrying out chemotherapy is a responsible task that requires a team approach, where very careful and constant monitoring of the patient is very important. The nurse has to know the unwanted side effects of different cytostatics and has to react on time. Psycho-

loška podrška i edukacija pacijenata i roditelja su važni za kvalitetan tretman. Sve sprovedene postupke treba evidentirati u sestrinsku dokumentaciju, koja je dobar izvor informacija u timskom pristupu pacijentu.

Ključne riječi: Cistostatska terapija, timski rad, sestrinska dokumentacija

logical support and education of patients and parents are important for quality treatment. All implemented procedures should be recorded in the nursing documentation, which is a good source of information in the team approach to the patient.

Key words: Cystostatic therapy, teamwork, nurse documentation

NEURORIZIČNA DJECA U PRIMARNOJ PEDIJATRIJSKOJ SLUŽBI

S. Pjanić, S. Hasanović, A. Lugavić, M. Remetić, Š. Paloš
JZNU Dom zdravlja „Dr Mustafa Šehović“, Dispanzer za predškolsku djecu, Tuzla

Neurorizična djeca su ona djeca koja su imala različite komplikacije tokom trudnoće majke, pri porodu ili neposredno poslije poroda. Takva djeca čine 10% novorođene populacije. Od toga 3% čine vosokoneurorizična djeca. **Cilj** rada bio je ukazati na značaj evidentiranja rizične djece, praćenja njihovog ranog rasta i razvoja i neophodnost uključivanja u ranu intervenciju te multidisciplinarnog djelovanja. **Metode:** Retrospektivna analiza 1035 zdravstvenih kartona djece rođene 2015. godine. **Rezultati:** U rizičnoj grupi sa malom težinom na rođenju, niskim Apgarom i prijevremeno rođenih bilo je 91 dijete (8,7%). Devetnaestoro djece (1,8%) imalo je neurološko oštećenje i bilo pod redovnom kontrolom neuropedijatra. **Zaključak:** Rana detekcija i intervencija važne su zbog činjenice da djeca, zahvaljujući neuroplasticitetu mozga, uz stručnu pomoć fizijatra, somatopeda, logopeda i psihologa, mogu savladati potrebne vještine određenim redoslijedom i time pozitivno uticati na rast i razvoj.

Ključne riječi: neurorizična djeca, rana intervencija

CHILDREN WITH NEURODEVELOPMENTAL RISK FACTORS AT PRIMARY CARE SETTINGS

S. Pjanić, S. Hasanović, A. Lugavić, M. Remetić, Š. Paloš
Public Health Institution, Health Center „Dr Mustafa Šehović“, Department for Preschool Children Tuzla, Bosnia and Herzegovina

Neurorisic children are the children who have had various complications during mothers pregnancy, in childbirth or immediately after the birth. Such children make up 10% of the newborn population. Of that 3% are highly neurorisic children. OBJECTIVE of the paper was to highlight the importance of registration of children at neurodevelopmental risk, monitoring their early growth and development and the need of early intervention and multidisciplinary approach. Methods: Retrospective analysis of 1035 health charts of children born in 2015. RESULTS: There were 91 children (8.7%) in the risk group of low birth weight, low Apgar and premature births. Nineteen children (1.8%) had neurological impairment and were under regular control of the neuropediatrician. Conclusion: Early detection and intervention are important due to the fact that children, thanks to the neuroplasticity of the brain, with expert help from physicists, somatopedists, speech therapists and psychologists, can adopt the required skills in a certain order and thus positively influence growth and development.

Key words: children at neurodevelopmental risk, early intervention

IMUNOGLOBULINSKE PUMPE I ULOGA SESTRE

A. Hamzić
KCUS, Disciplina za zdravlje djeteta, Pedijatrijska klinika, Sarajevo

Uvod: Imuni sistem je sistem organa koji štiti organizam od patogenih mirkroorganizama i njihovih toksina. Ovi organi su raspoređeni su svuda po tijelu. Imunoglobulini su bjelančevine koje proizvode plazma ćelije. Stvaraju se kao reakcija imunog sistema na toksične substance. Imunoglobulini se pojavljuju u različitim klasama a najpoznatije su: IgA, IgD, IgE, IgM, IgG. Razlikuju se po biološkim svojstvima, funkcionalnoj lokaciji i sposobnosti da se bave različitim antigenima. Imunodeficijencija je stanje organizma u kojem je imuni sistem oslabljen u borbi protiv infekcija. Postoji sekundarna (stečena) imunodeficijencija i primarna (urođena) imunodeficijencija. Imunodeficijencije nisu izlječive ali uz pomoć substitucione terapije imunoglobulinima ovim pacijentima se omogućava normalan život. **Cilj rada:** Prikazati ulogu medicinske sestre u aplikaciji imunosupresivne terapije imunoglobulinima venskim i subkutanim putem, briga o pacijentu oboljelom od imunodeficijencije, edukacija pacijenata za adekvatno rukovanje imunoglobulinskom pumpom i aplikaciju imunoglobulina subkutano. **Zaključak:** Cilj edukacije pacijenta za adekvatno rukovanje imunoglobulinskom pumpom je da se osobama da imunodeficijencijom smanji broj infekcija tokom života, smanje simptomi koji prate osnovnu bolest i koliko je god moguće obezbijedi normalan život.

Ključne riječi: Imunoglobulini, imunosupresivna teraija, imunoglobulinska pumpa, imunodeficijencija, medicinska sestra.

IMMUNOGLOBULIN PUMPS AND ROLE OF NURSE

A. Hamzić
Pediatric Clinic, Department for Child Health Care, Clinical Center University of Sarajevo, Sarajevo, Bosnia and Herzegovina

Introduction: Immune system is a system of organs protecting the organism from pathogen microorganisms and their toxins. These organs are distributed all over the body. Immunoglobulins are proteins that produce plasma cells. They are created as a reaction of the immune system on toxic substances. Immunoglobulins appear in different classes and the most known are IgA, IgD, IgE, IgM, Ig. They are differed by biological attributes, functional location and ability to deal with different antigens. Immunodeficiency is a state of the organism in which the immune system is weakened in battling the infection. There are two types of immunodeficiency: secondary (acquired) and primary (inborn). Immunodeficiency is not curable, but with the help of substitute therapy with immunoglobulins, these patients can have a normal life. **Goal:** To show the role of the nurse in applying the immunosuppressive therapy by introducing immunoglobulins by intravenous or subcutaneous injection, caring for a patient with immunodeficiency, education of patient for adequate handling of immunoglobulin pump and application of immunoglobulins by subcutaneous injection. **Conclusion:** The goal of education of patients for adequate handling of immunoglobulin pump is to reduce the number of infections for people suffering from immunodeficiency during their lifetime, to reduce symptoms which follow the basic illness and provide normal life as much as possible.

Keywords: Immunoglobulins, immunosuppressive therapy, immunoglobulin pump, immunodeficiency, nurse.

PRIRODNI POROĐAJ SA ASPEKTA SESTRINSTVA

E.Hasić, A.Faković
JZU UKC Tuzla, Klinika za ginekologiju i akušerstvo

Uvod: Prirodni porođaj podrazumjeva porođaj bez upotrebe lijekova i indukcije. Trudnoća i porođaj su dva najvažnija događaja koja će žena iskusiti u životu. Osnovni faktori koji dovode do bolnog porođaja su STRAH, GRČ I BOL. Ako se uklone ovi faktori u velikoj mjeri će se umanjiti bolan porođaj. Porođaj je individualan i za svakoga drugačiji. Boravak u porodilištu i porođaj za svaku trudnicu su posebno vrijedni, ali osjetljivi trenutci koji se pamte čitav život. **Ciljevi** su nam razviti pozitivan stav da je prirodni porođaj najbolji izbor, te unaprijediti i postići aktivno sudjelovanje trudnice u porođaju,kao i uspostavljanje boljeg kontakta i suradnje između trudnice i babice jer time činimo da porođaj bude što lakši i bezbolniji. Humanizacija porođaja za primarni cilj ima smanjenje trenda porođaja carskim rezom, razbijanje tabua "strah od porođaja", pomoći trudnici da koristi sopstvene snage kako bi aktivno učestvovala u prirodnom porođaju. Strah od bola je moguće ukloniti upotrebom raznih načina koje će sačuvati snagu trudnice da bi obavila najljepši zadatak i postala sretna majka. **Zaključak:** Prirodni porođaj je najzdraviji, najsigurniji i najljepši način rođenja, kako za bebu tako i za majku. Da bi taj proces koji je priroda tako savršeno osmislila tekao bez poteškoća i sa što manje boli, potrebno je da trudnicama omogućimo individualan pristup i odgovorimo njenim potrebama.

Ključne riječi: Prirodni porođaj, bol, strah, trudnica, babica.

NATURAL BACKGROUND WITH ASPECT OF SESTRINTH

E.Hasić, A.Faković
Clinic for Children's Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Natural delivery implies birth without the use of drugs and induction. Introduction Pregnancy and childbirth are the two most important events that a woman will experience in life. The main factors that lead to painful birth are FEAR, SPASM AND PAIN. If these factors are removed, the painful delivery will be greatly reduced. The delivery is individual and for everyone else. Maternity leave and delivery for each pregnant woman are particularly valuable, but sensitive moments that are remembered for a lifetime. **Golas:** Our goals are to develop a positive attitude that natural delivery is the best choice, and to improve and achieve active participation of pregnant women in labor, as well as establishing better contact and cooperation between pregnant women and midwife, as this makes birth to be as easy and painless as possible. The humanization of childbirth for the primary goal is to reduce the trend of cesarean delivery, break the taboo "fear of delivery," help the pregnant woman to use her own strength to actively participate in natural delivery. Fear of pain can be removed by using various ways that will preserve the power of a pregnant woman to perform the most beautiful task and become a happy mother. **Conclusion:** Natural birth is the healthiest, safest and most beautiful way of birth, both for the baby and for the mother. In order for this process, which is so perfectly designed by nature, to run without difficulty and with as little pain as possible, it is necessary to provide women with an individual approach and respond to her needs.

Key words: Natural delivery, pain, fear, pregnant woman, midwife.

TERAPIJSKA HIPOTERMIJA U LIJEČENJU HIE

Munevera Hrvat
KCUS, Disciplina za zdravlje djeteta–Pedijatrijska klinika Sarajevo

Uvod: Sve do 2011 godine, kada je inducirana kontrolisana hipotermija uvedena kao standardna procedura na na našem odjeljenju, povodili smo pasivno hlađenje u terapiji HIE kod novorođenčadi. **Cilj rada:** Indikacije za tretman su: Apgar ≤ 5 u 10-toj minuti, potreba za reanimacijom u 10-toj minuti nakon rođenja, pH < od 7 i ili deficit baza ≥ od 16 u bilo kojem uzorku krvi u prvih sat vremena po rođenju. Ukoliko pacijent zadovoljava jedan od ovih kriterija, procjenjuje se neurološko stanje: stanje svijesti (letargija, stupor ili koma) i ima barem jedno od slijedećeg: hipotonija koja se ne popravlja nakon uspješne reanimacije, abnormalni refleksi, odsutan ili slab refleks sisanja, kliničke konvulzije. Kod provođenja pasivne hipotermije potrebno je mjeriti rektalnu temperaturu svakih 15 minuta, a ukoliko je rektalna temperatura viša od 35,5 C hlađene provodite ledenim gelom ili ledom ali bez direktnog kontakta na kožu. Mi upotrebljavamo aparat za hlađenja (Artic Sun), tako što postavimo blaznice na suhu čistu neoštećenu kožu uporedo sa kičmenim stubom prema trbuhu, priključujemo cjevčice blaznica na cijev za dovod vode i podešavamo ciljnu temperaturu (33,5 C) i brzinu hlađenja (0,5 C).. Nakon 72 sata zagrijavamo pacijenta, određujući brzinu zagrijavanja (0,5 C na sat) i ciljnu temperaturu. Tokom tretmana hipotermijom potrebno je održavati saturaciju kisikom od 93 do 96% (uz koliko je moguće minimalan FiO2), pCO2 i glikemiju u referentnim granicama i hemodinamsku stabilnost, uz upotrebu inotropa (ako je potrebno). Neophodna je adekvatna sedacija i analgezija (Morphin). Unos tekućine treba reducirati na 60 ml/kg/dan, a u slučaju hipovolemije nadoknaditi gubitke. **Zaključak:** U liječenju hipotermijom uz adekvatno sedaciju pacijenta neophodno je održavati home-

THERAPY HYPOTHERMIA IN HEALTH CARE

Munevera Hrvat
Pediatric Clinic, Department for Child Health Care, Clinical Center University of Sarajevo, Sarajevo, Bosnia and Herzegovina

Intorduction: Until 2011, when induced controlled hypothermia was introduced as a standard procedure in our department, we performed passive cooling in HIE therapy innewborns. **Objective on going:** Indicate the importance of therapeutic hypothermia.Treatment indications are: Apgar ≤ 5 in the 10th minute, need for reanimation at the 10th minute after birth, pH <7 and or base deficient ≥ 16 in any blood sample in the first hour after birth. If a patient meets one of these criteria, a neurological condition is assessed: a state of consciousness (lethargy, stupor or coma) and has at least one of the following: hypotonia that does not repair after successful reanimation, abnormal reflexes, absent or poor reflex sucking, clinical convulsions.When conducting passive hypothermia, it is necessary to measure the rectal temperature every 15 minutes, and if the rectal temperature is higher than 35.5 C, use cool ice or ice without direct contact with the skin. We use the Artic Sun by placing the pads on dry cleanundamaged skin along with the spinal column towards the stomach, connecting the armpit tubes to the water supply line and adjusting the target temperature (33.5 ° C) and cooling rate (0, 5 C). After 72 hours, the patient is heated, determining the warmingrate (0.5 C per hour) and the target temperature. During treatment with hypothermia, saturation should be maintained with oxygen from 93 to 96% (with as little as possible FiO2), pCO2 and glycemia at the reference limits and hemodynamic stability, using inotrop (if necessary). Suitable sedation and analgesia (Morphin) is necessary. The fluid intake should be reduced to 60 ml / kg / day, and in case of hypovolemia, the losses will be compensate.

ostazu i hemodinamsku stabilnosti uz stalni monitoring te brzo korigovati svako odstupanje. Time, ne samo da se spriječavaju neželjeni efekti hipotermije nego se poboljšavaju i šanse za povoljan ishod.

Ključne riječi: neonatus, asphyxija, hipotermija

Conclusion: In the treatment of hypothermia with adequate patient sedation it is necessary to maintain homeostasis and hemodynamic stability with constant monitoring and quickly correct any deviation. This not only helps to prevent unwanted effects of hypothermia, but also improves chances of a favorable outcome.

Keywords: nonate, asphyxia, hipotermia

PRIPREMA PACIJENATA I APLIKACIJA MONOKLONSKIH ANTITIJELA

S. Ivanov, R. Memić, A. Ćosićkić, S. Dervišević
JZU UKC Tuzla, Klinika za dječije bolesti

Monoklonska antitijela (biološki lijekovi) su supstance proizvedene u laboratorijama, koje specifično prepoznaju određene strukture na površini malignih ćelija kao što su proteini. Svako monoklonsko antitijelo prepoznaje samo jedan cilj (specifičan protein ili antigen). Monoklonska antitijela se primjenjuju kod reumatoidnog artritisa, juvenilnog idiopatskog artritisa, uveitisa, Cronove bolesti i kod većine hroničnih zapaljenskih oboljenja sa progresivnim tokom. Učinak liječenja očituje se brže nego s dosadašnjim lijekovima. Primjena monoklonskih antitijela u svijetu je terapija izbora. **Ciljevi rada:** Ukazati na važnost pripreme pacijenata i pravilnu primjenu lijekova iz grupe monoklonskih antitijela u Pedijatrijskoj poliklinici-dnevnoj bolnici u periodu 01.01.2016 do 31.12.2017 godine. **Materijal i metode:** Urađena je retrospektivna analiza podataka iz istorija bolesti, sestrinske dokumentacije i protokola pacijenata Ispitivanje je rađeno u Klinici za dječije bolesti Tuzla, Odjeljenje reumatologija, alergologija i imunologija i dnevna bolnica gdje je lijek apliciran. **Rezultati:** U posmatranom vremenskom periodu u Dnevnoj bolnici je u 2016. godini od ukupno tretiranih

PREPARATION OF PATIENTS AND APPLICATIONS OF MONOCLON ANTITIES

S. Ivanov, R. Memić, A. Ćosićkić, S. Dervišević
Clinic for Children's Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Monoclonal antibodies are substances produced in laboratories that specifically recognize certain structures on the surface of malignant cells such as proteins. Each monoclonal antibody recognizes only one target (specific protein or antigen) Monoclonal antibodies are applied in rheumatoid arthritis, juvenile idiopathic arthritis, and in most chronic inflammation of inflammatory diseases by progressive currents. The last 10 years began with a new therapy of rheumatic diseases with monoclonal antibodies. The indication for the use of these drugs is currently limited in childhood mainly to the JIA, and Cron's disease, and to other rheumatic autoimmune diseases. The effect of treatment is manifested faster than with the existing drugs that are changing the flow of rheumatic diseases. The use of monoclonal antibodies in the world is a selection therapy, and in the world of the environment they are on the positive list. **Objectives:** To indicate the importance of preparing patients and correct administration of drugs from the group of monoclonal antibodies. Indicate the frequency of application of therapy in the

3016 pacijenta kod 11 aplicirano 140 doza monoklonskih antitijela Adalimumab (Humira), a u 2017godini od ukupno 3117 pacijenta kod njih 11 aplicirane su 152 doze. 2 djece je primalo ambulantno Adalimumab. Adalimumab je apliciran kod 13 djece:7 ženskog (53,8%) i 6 (46,2%) muškog spola, a prema uzrastu: 0-2,9g. kod 2 djece, od 3-6,9g kod 3 djece, od 7-9,9g kod 2 djece i od 10-15g kod 6 djece. Od 13 pacijenata koji su primali Adalimumab, 10 pacijenata je sa dijagnozom JRA, 2 sa Uveistisom i 1 Morbus Chron. **Zaključak:** Biološki lijekovi se sve više primjenjuju kod djece sa reumatskim bolestima, naročito u teškim oblicima JRA. Najčešće aplicirano monoklonsko antitijelo u našoj Klinici je Adalimumab koje se primjenjuje s.c. Primjena monoklonskih antitijela u dječijoj reumatologiji doprinosi smanjenju broja hospitalizacija i poboljšanju kvaliteta života.

Ključne riječi: Monoklonska antitijela, JRA, primjena lijekova

Department of Rheumatology, Allergology and Immunology and Daily Hospital in the period from 01.01.2016 until 31.12.2017. Material and methods: Testing done at the Tuzla Children's Hospital, Department of Rheumatology, Allergology and Immunology and the daily hospital where the drug is administered. **Results:** In the observed period of time in the Daily Hospital, in 2016, of the 3016 treated patients in 11 patients, 140 doses of monoclonal antibodies were administered to Adalimumab (Humira), and in 2017, out of 3117 patients, 11 of them were administered 152 doses. 2 children received ambulatory Adalimumab. Humira has been applied in 13 children (7 females (53.8%) and 6 (46.2%) males), and according to age: 0-2.9g. in 2 children, from 3-6.9g in 3 children, from 7-9.9g in 2 children and from 10-15g in 6 children. Of the total of 13 patients who aplied Humira, there were 10 patients diagnosed with JRA, 2 with Uveistis and 1 Morbus Chron. **Conclusion:** Biological medicines are increasingly being used in children with rheumatic diseases, especially in severe forms of JRA. The importance of a graduate nurse is primarily in the proper preparation of the patient for the application of the drug, considering the type and severity of the disease from which the children get ill. The most commonly administered monoclonal antibody in our Clinic is Adalimumab (HUMIRA), which is applied s.c. The use of monoclonal antibodies (biological drugs) in childrheumatic rheumatology is very successful because, by their application, most children have a chance to experience a deep age with minimal complications. Teamwork today manages to significantly reduce the number of people with disabilities from these diseases.

Key words: Monoclonal antibodies, JRA , administration of drugs

ZDRAVSTVENA NJEGA DJECE NAKON KOREKCIJE UROĐENIH SRČANIH ANOMALIJA

E. Kundo, A. Hadžić, A. Sarić
KCUS , Disciplina za zdravlje djeteta–Pedijatrijska klinika Sarajevo

Razvijenost pedijatrije se procjenjuje na osnovu razvijenosti pedijatrijske kardiologije i kardiohirurgije koja je glavni indikator smanjenja neonatalne smrtnosti. Pedijatrijska kardiologija se uglavnom bavi urođenim srčanim anomalijama koje u najvećem broju slučajeva zahtijevaju operativni tretman. Pedijatrijska kardiohirurgija je etablirana prije 22 godine a u našoj studiji smo uključili postoperativni tretman korigovanih urođenih srčanih anomalija tokom dvije godine, odnosno 76 djece. Postoperativne komplikacije, uključujuči i febrilnost imali smo kod 87% pacijenata (poremećaj srčanog ritma, ascites, perikardijalni izljev, pleuralni izljev, sepsa, atelektaze, pneumotoraks, hilotoraks, konvulzije, vomitusi, paralitički ileus...) Pedijatrijska kardiološka sestra je praktički vodila u prosjeku 7-10 dana, postoperativni tok sa monitoringom vitalnih parametara, bilansa tečnosti, diurezom, termoregulacijom, ishranom, terapijom, održavanjem toalete rane, respiratornim fizikalnim tretmanom, kontrolom drenova, privremenog pejsmejkera, urinarnim kateterom.. Postoperativni tretman djece nakon korekcije urođene srčane anomalije znatno je zahtjevniji i teži nego nakon većine drugih operativnih zahvata, što se može posmatrati i kroz broj dana intenzivne njege, učestalosti komplikacija, povećanim brojem medicinsko- tehničkih radnji i utroška materijala. Edukacijom, nesebičnim angažmanom, a nada sve visokom profesionalnošću se isprofilisala pedijatrijska medicinska sestra kardiološkog smjera koja je od krucijalnog značaja.

Ključne riječi: zdravstvena njega, postoperativne urođene srčane mane, pedijatrijska kardiološka sestra

HEALTH CARE OF CHILDREN AFTER CORRECTION OF CONGENITAL HEART ANOMALIES

E. Kundo, A. Hadžić, A. Sarić
Pediatric Clinic, Department for Child Health Care, Clinical Center University of Sarajevo, Sarajevo, Bosnia and Herzegovina

Pediatric development is assessed based on the development of pediatric cardiology and cardiac surgery, which is a major indicator of the reduction in neonatal mortality. Pediatric cardiology mainly deals with congenital heart anomalies that in most cases require surgical treatment. Pediatric cardiac surgery was established 22 years ago and in our study we included postoperative treatment of corrected congenital heart anomalies for two years, or 76 children. Postoperative complications, including fever, were found in 87% of patients (heart rhythm disorder, ascites, pericardial outflow, pleural effusion, sepsis, atelectasis, pneumothorax, hilotoraks, convulsions, vomitus, paralytic ileus ...).The pediatric cardiology nurse practically ran an average of 7-10 days, a postoperative course with monitoring of vital parameters, fluid balance, diuretic, thermoregulation, nutrition, therapy, wound dressing, respiratory physical treatment, control of drains, temporary pacemakers, urinary catheter. Post-operative treatment of children after the correction of congenital heart anomalies is much more demanding and difficult than after most other surgical procedures, which can be observed through the number of days of intensive care, the frequency of complications, the increased number of medical and technical actions and the consumption of materials. By education, selfless engagement, and hopefully with all the high professionalism, the pediatric nurse of the cardiologic direction is crucial, which is of crucial importance.

Key words: nursing care, post-operative congenital heart defects, pediatric cardiac nursing

SESTRINSKA NJEGA U ADOLESCENTNOJ GINEKOLOGIJI

B. Kurtić, N.Grabić
JZU UKC Tuzla, Klinika za ginekologiju i akušerstvo

Uvod: adolescentna ginekologija se bavi fiziologijom i patologijom ženskih spolnih organa u dobi od 10 do 20 godine života. Najčešći problemi ove dobi su zapaljenja vulve, vagine, povrede genitalnih organa (oštrim i tupim predmetima), rani , kasni pubertet, endokrinološki poremećaj, neplanirane trudnoće kao i sumnje na silovanja. **Cilj:** prikazati najčešće uzroke zbog kojih su se pacijentice adolescentne dobi javile u prijemnu ambulantu gak tuzla i učestalost pojave trudnoća u adolescentnoj dobi. **Materijal i metode:** rađena retrospektivna analiza za koju su podaci korišteni iz: protokola rada evidencije pacijentica na gak-u prijemna ambulanta za 2017godinu. **Rezultati:** tokom 2017.godine u prijemnoj ambulanti gak tuzla pregledano je 109 adolescentica,što je 6,19% od ukupnog broja pregledanih pacijentica. Kod 49 pacijetnica radilo se o pregledima vezanim sa trudnoćom,što je 44.95%. 21 adolescentica se javila zbog juvenilne metroragije,što je 19,26%. 5 adolescentica je imalo povredu vanjskih genitalija,što je 4,58% od ukupnog broja adolescentica. 9 pacijentica se javilo zbog sumnje na silovanje ili odnosa sa punoljetnom osobom,što je 8,25%. Dvije pacijentice adolescentice su imale ciste na jajniku,što je 1,83%. 4 adolescentice sa dijagnostikovanim vulvitisom,što je 3,66%,dok 18,34%,odnosno 20 adolescentica se javilo za mišljenje ginekologa po preporuci drugih specijalista. **Diskusija:** u toku 2017.godine od ukupnog broja pregledanih pacijentica u prijemnoj ambulanti gak(1760pregleda); 6,19% bilo je vezano za adolescentice. Najveći postotak njih je između 15 i 20 godina života. Rezultati pokazuju da u najvećem broju je riječ o trudnoćama(44,95%). Zaključak: danas adolescente karakterizira ranije spolno

NATURAL CARE IN ADOLESCENT GYNECOLOGY

B. Kurtić, N.Grabić
Clinic for Gynecology and Obstetrics, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Introduction: adolescent gynecology deals with the physiology and pathology of female sexual organs from the age 10 to 20. The most common problems of this group are inflammation of vulva, vagina, injuries of genital organs (sharp and blunt objects), early and late puberty, endocrine disorders, unplanned pregnancy and suspicion of rape. **Goal:** to show the most common causes for which adolescent patients refour in our clinic and the incidence of pregnancy in adolescence. **Material and methods:** a retrospective analysis; the data was used from the protocol for the year 2017. **Results:** during 2017, 109 adolescent patients were examined in our clinic, which is 6.19% of the total number of patients examined. 49 patients came to our clinic about pregnancy-related examinations, which is 44.95%. 21 adolescents reported themselves due to juvenile metroragy, which is 19.26%. 5 adolescents had an outbreak of external genitalia, which is 4.58% of the total number of adolescents. 9 patients reported for suspected rape or relationship with an adult, which is 8.25%. The two adolescent patients had cysts on the ovary, which is 1.83%. 4 adolescents with diagnosed vulvitis, which is 3.66%, while 18.34%, or 20 adolescents, reported for the opinion of a gynecologist at the recommendation of other specialists. **Discussion:** During 2017, out of the total number of patients examined in our clinic (1760previews); 6.19% were related to adolescents. Most of the adolescents are between 15 and 20 years old. The results show that most of this pacients came about pregnancy related examinations(44.95%). Conclusion: Today, adolescents are characterized by earlier sexual and physical maturation, which are not accompanied by emotional matura-

i fizičko sazrijevanje, a koje ne prati emocionalno sazrijevanje, veći je udio spolno aktivnih adolescenata, ranija je dob stupanja u spolne odnose, prisutno je eksperimentiranje, adolescenti imaju osjećaj neranjivosti, ne koriste se sigurne metoda zaštite od trudnoće,a što sve može dovesti do posljedica kao što je infekcija spolno prenosivim bolestima ili adolescentna trudnoća.Trudnoće u adolescentno doba najčešće nisu planirane i željene, već se događaju slučajno, neplanirano. Znamo da adolescencija nije idealno vrijeme za rađanje jer se mladi organizam još razvija i sazrijeva, tako da adolescentne trudnoće nose određene zdravstvene rizike i za majku i za dijete.

Ključne riječi: trudnoća, adolescentice

tion, the greater the proportion of sexually active adolescents, the earlier age of sexual intercourse, experimentation is present, adolescents have a sense of invulnerability, no safe method of protection from pregnancy is used which can lead to consequences such as infection with sexually transmitted diseases or adolescent pregnancies. Pregnancy in adolescence is most often not planned and desired, but occurs randomly, unplanned. We know that adolescence is not the ideal time to bear because the young organism is still developing and mature, so adolescent pregnancies carry certain health risks for both mother and child.

Keywords: pregnancy,adolescent,

PEDIJATIJSKA KATARAKTA NA PODRUČJU TUZLANSKOG KANTONA U BOSNI I HERCEGOVINI

N. Mujkić, M. Halilbašić, M. Sinanović, S. Krasnić
JZU UKC Tuzla, Klinika za očne bolesti

Cilj: Utvrditi učestalost i epidemiološke karakteristike pedijatrijske katarakte na području Tuzlanskog kantona u Bosni i Hercegovini. **Metode:** Retrospektivnom studijom obuhvaćeni su svi pacijenti s pedijatrijskom kataraktom, koji su bili hospitalizirani u Klinici za očne bolesti Univerzitetskog kliničkog centra Tuzla, tokom osmogodišnjeg perioda. Analizirani su učestalost, morfologija, vrsta i etiologija katarakte, kao i prisustvo drugih okularnih ili sistemskih oboljenja. **Rezultati:** Studija je obuhvatila 87 očiju kod 58 djece. Prosječna dob pri prezentaciji bila je 11.12 (SD±9.03) godina. Trideset četiri pacijenta (58.62%) bili su muškog, a 24 (41.38%) ženskog spola. Dvadeset devet (50%) katarakti je bilo jednostrano (unilateralno). Trideset sedam (63.79%) pacijenata imalo je izolovanu kataraktu, dok su

PEDIATRIC CATARACT IN TUZLA CANTON BOSNIA AND HERZEGOVINA

N. Mujkić, M. Halilbašić, M. Sinanović, S. Krasnić
Clinic for Eye Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Aim To estimate incidence and to present descriptive epidemiological data on pediatric cataract in Tuzla Canton, Bosnia and Herzegovina. **Methods:** Medical records of all patients hospitalized at the Eye Clinic of the University Clinical Center Tuzla over the 8-year period were retrospectively examined. Prevalence, morphology and type of cataract, its possible etiology and existence of other associated ocular and systemic diseases were analyzed. **Results:** The study included 87 eyes of 58 children. Average age at presentation was 11.12 (SD±9.03) years. A total of 34 (58.62%) patients were males and twenty-four (41.38%) females. Twentynine (50%) cataracts were unilateral. Thirty-seven (63.79%) patients had isolated cataracts and 24 (29.31%) patients had other ocular anomalies associated with pediatric cataract. High refractive anom-

kod 24 (29.31%) pacijenta, uz kataraktu, pronađene i druge okularne anomalije. Visoke refraktivne anomalije, nistagmus i mikroftalmus bili su najčešće udruženi s kataraktom. Strabizam je imalo 14 (24.13%) pacijenata. Stražnja kortikalna katarakta bila je prisutna kod 29 (32.58%), a nuklearna kod 28 (31.46%) pacijenata. Učestalost kongenitalne katarakte na području Tuzlanskog kantona iznosi 2.62 na 10.000 poroda, dok je učestalost pedijatrijske katarakte 8.6 na 10.000 poroda. **Zaključak :** Učestalost pedijatrijske katarakte na području Tuzlanskog kantona na razini je drugih zemalja. Evidentan je problem kasne prezentacije djece s kataraktom, kao i potreba za rješavanjem ovog problema. Edukacija roditelja i podizanje javne svijesti o ovom problemu neophodni su kako bi se utjecalo na preventabilne uzroke slabovidnosti kod djece.

Ključne riječi: slabovidnost djece, učestalost katarakte, epidemiologija pedijatrijske katarakte

alies, nystagmus and microphthalmus were most commonly associated ocular findings. Strabismus was present in 14 (24.13%) cases. Posterior cortical cataract was present in 29 (32.58%) and nuclear cataract in 28 (31.46%) cases. Estimated incidence of congenital cataract was 2.62 per 10.000 births and incidence of pediatric cataract was 8.6 per 10.000 births. **Conclusion:** Prevalence of pediatric cataract in Tuzla Canton is within the worldwide range. Late presentation of children with cataract remains the problem that needs to be addressed. Improved patient education and public awareness are needed in order to change the course of avoidable childhood visual impairment.

Key words: childhood visual impairment, cataract incidence, pediatric cataract epidemiologyc

ISHOD NOVOROĐENČADI ROĐENE CARSKIM REZOM

M. Podgorčević, S. Ćudić
JZU UKC Tuzla, Klinika za ginekologiju i akušerstvo

Cilj rada: Ispitati učestalosti carskog reza unazad 6 mjeseci i ishod novorođenčadi rođene carskim rezom. **Rezultati:** U periodu od 01.01.-30.06.2017. godine na Klinici za ginekologiju i akušerstvo Tuzle ukupno je rođeno 1823 novorođenčadi, od čega je prirodnim putem rođeno 1325 (62,7%), a carskim rezom 498 (27,3%) novorođenčadi.Najveći broj novorođenčadi rođene carskim rezom je od majki I-rotki, 312 (62,7%) uz značajnu statističku razliku u odnosu na majke II i III i više rotke. Analizom godina starosti majki čija su novorođenčad rođena carskim rezom nađen je najveći broj u rasponu od 18.-35 go-

THE OUTCOME OF NEWBORNS AFTER C-SECTION

M. Podgorčević, S. Ćudić
Clinic for Gynecology and Obstetrics, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

The aim: The aim of this study was to investigate the frequency of C-sections over the six months period and the outcome of newborns after C-section. **Results:** In the period 1 January- 30 June, 2017, at the Clinic for Gynecology and Obstetrics, there were born 1823 newborns, out of which 1325 (62.7%) of them were born by a natural birth, and 498 (27.3%) of them were born by C- section. The biggest number of newborns born by C-section were from a first-time- mothers 312 (62.7%) with significant statistical difference in comparison to a second- time mothers,

dina (82,1%). U šestomjesečnom periodu carskim rezom je rođeno više muške u odnosu na žensku novorođenčad, ali bez statističke značajnosti. Najveći broj novorođenčadi rođene carskim rezom je iz skupine porođajne težine od 3000-3999.g., a potom porođajne težine 2000-2999.g. Najveći broj je rođeno u terminu 39.- 40. GN 255(51,2%), potom od 37.-38.GN 168 (33,7%) novorođenčadi. Analizirana je i vitalnost novorođenčadi rođene carskim rezom. Apgar scor iznad 8 je imalo 83,1% novorođenčadi, a u srednje teškoj asfiksiji sa Apgar scorom 5-7 je rođeno 63 (12,7%) novorođenčadi, dok je u teškoj asfiksiji sa Apgar scorom ispod 5 rođeno 21 (4,2%) novorođenčadi. Zbog neophodnog daljeg intenzivnog liječenja i praćenja na OINJ Klinike za dječije bolesti Tuzla je premješteno 44 (8,8%) novorođenčadi. **Zaključak:** Povećana učestalost carskog reza kod prijevremnog, ali i kod terminskog poroda, smanjuje učestalost neonatalne asfiksije.

Ključne riječi: novorođenčad, carski rez, kliničke karakteristike

third- time mothers and more. By analyzing the age of mothers whose newborns were born by C-section, the biggest number ranged from 18 -35 years of age (82.1%). Over the six monts period, more male than female newborns were born by C- section, but without statistical significance. The biggest number of newborns born by C- section was from a group with birth weight 3000-3999 grams, and than from a group with birth weight 2000-2999 grams. The biggest number newborns were born between 39-40 gestational age 255 (51.2 %) newborns, and than between 37-38 gestational age 168 (33.7%) newborns.We also analyzed the vitality of newborns immediately after C- section. Apgar score above 8 had 83.1% of newborns, Apgar score under 5-7 had 63 (12.7%) of newborns who were born with mild asphyxia, while Apgar score under 5 had 21 (4.2%) of newborns who were born with severe asphyxia. Because of the need for futher intensive treatment and monitoring, 44 (8.8%) of newborns were hospitalized at the ICU of the Clinic for Children's Diseases. **Conclusion:** The increased frequency of C-section in a preterm and a full- term births reduces the frequency of neonatal asphyxia.

Key words: newborns, C- section, clinical characteristics

ZDRAVSTVENA NJEGA DJECE NAKON UROLOŠKIH OPERATIVNIH ZAHVATA

T. Praljak, M. Kurević, R. Šiljegović
JZU UKC Tuzla, Klinika za dječije bolesti

Proces zdravstvene njege u sestrinskoj njezi predstavlja osnove standarda i normativa u zdravstvenoj njezi i uključuje komponente procjene, dijagnoze, ishoda, planiranje, implementaciju i evaluaciju. **Cilj rada:** Prikazati specifičnosti procesa zdravstvene njege medicinskih sestara/ tehničara nakon uroloških

NURSING CARE OF CHILDREN AFTER UROLOGICAL SURGICAL

T. Praljak, M. Kurević, R. Šiljegović
Clinic for Children's Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

The nursing care process represents the basis of standards and norms in health care and includes components of assessment, diagnosis, outcome, planning, implementation and evaluation. **Objective:** To show the specifics of the nursing care process of nurses / technicians after urological surgery in children and

operativnih zahvata kod djece i značaj pravilnog planiranja, evaluacije i dokumentiranja postupaka zdravstvene njege. **Materijal i metode:** Retrospektivnim istraživanjem obuhvaćeni su pacijenti koji su hospitalizirani u odjeljenju dječije hirurgije Klinike za dječije bolesti u periodu od 01.01.2010 – 31.12.2017. godine. Analizirana je medicinska dokumentacija: istorije bolesti i sestrinska dokumentacija. **Rezultati:** U posmatranom vremenskom periodu u Odjeljenju za dječiju hirurgiju Klinike za dječije bolesti Tuzla hospitalizirano je 3582 pacijenta od čega je 423 (11,90%) pacijenata sa urološkim operativnim zahvatima. Na gornjem urinarnom sistemu je načinjeno 197 (46,6 %) i donjem 226 (53,4%) operativnih zahvata. Zdravstvena njega medicinske sestre/tehničara u postoperativnom toku se ogleda u sprovođenju opšte i specifične zdravstvene njege. U dječijoj urologiji se koriste različiti kolektorski i drenažni sistemi koji zahtijevaju specifične mjere vezane za funkcionisanje i pravilno rukovanje. **Zaključak:** U standardima profesionalnog sestrinstva su autoritativne izjave dužnosti prema kojima medicinske sestre, bez obzira na uloge, populacije ili specijalnosti posao obavljaju u skladu sa utvrđenim kompetencijama. Proces zdravstvene njege obuhvata značajne akcije poduzete od strane medicinskih sestara/tehničara i tvori temelje sestrinskog odlučivanja i istraživanja.

Ključne riječi: Proces zdravstvene njege, urološki operativni zahvati, drenažni sistemi

the importance of proper planning, evaluation and documentation of health care procedures. **Materials and Methods:** Retrospective research includes patients who have been hospitalized in the Pediatric Surgery Department of the Children's Hospital Clinic in the period from 01.01.2010 to 31.12.2017. Medical documentation was analyzed: history of diseases and nurse documentation. **Results:** In the observed period, 3582 patients were hospitalized in the Department of Pediatric Surgery of the Children's Hospital Clinic Tuzla, of which 423 (11.90%) were patients with urological surgeries. 197 (46.6%) surgeries were performed on the upper urinary tract, and 226 (53.4%) surgeries were performed on the lower urinary tract. Nursing care by nurses and medical technicians in the postoperative course is reflected in the implementation of general and specific health care. In pediatric urology, different collector and drainage systems are used which require specific measures related to functioning and proper handling. **Conclusion:** By professional nursing standards, there are authoritative statements of duty according to which nurses, regardless of their roles, population or specialties, work in accordance with their established competencies. The health care process includes significant actions taken by nurses / technicians and forms the foundations of nursing decision-making and research.

Keywords: Health care process, urological surgical procedures, drainage systems

NEINVAZIVNA MEHANIČKA VENTILACIJA KOD DJECE

H. Sejdin, M. Ćurčić
JZU UKC Klinika za dječije bolesti Tuzla

Na odjeljenjima intenzivne terapije, sprovođenjem intenzivne njege i intenzivnog medikamentoznog liječenja, omogućeno je održavanje vitalnih funkcija koje su u manjem ili većem stepenu ugrožene uzrocima i poremećajima različite prirode. Mehanička ventilacija pluća je tokom duge istorije prošla kroz različite faze koje su bile povezane za tehnološki i naučni razvoj svog vremena. Zahvaljujući modernoj tehnologiji, boljim mogućnostima liječenja i zdravstvene njege smanjila se smrtnost, ali i porastao broj djece s hroničnim plućnim bolestima koja zahtijevaju respiracijsku potporu. Kao i uvijek u novonastalim situacijama, javljaju se brojni etički, ekonomski i medicinski problemi. **Cilj rada:** Predstaviti značaj medicinske sestre/tehničara u zdravstvenoj njezi kod pacijenata na neinvazivnoj mehaničkoj ventilaciji. **Materijal i metode:** Urađena je retrospektivna analiza sestrinske dokumentacije, istorija bolesti i odjeljenjskog protokola Odjeljenja za intenzivnu terapiju i njegu Klinike za dječije bolesti u periodu od 01.01.2017 godine do 31.12.2017. godine. **Rezultati:** U posmatranom vremenskom periodu u Odjeljenju za intenzivnu terapiju i njegu hospitalizirano je 462 pacijenta od čega su 132 (28,5%) pacijenta zahtjevala mehaničku ventilaciju.Od ukupnog broja pacijenata na mehaničkoj ventilaciji, 32 (24,2%) pacijenta su podvrgnuta jednom od modela neinvazivne mehaničke ventilacije. Pedijatrijskog uzrasta bilo je 8 pacijenata, 4 dječaka i 4 djevojčice, a neonatalnog uzrasta bilo je 24 pacijenta, 10 muškog spola i 14 ženskog spola. **Zaključak:** Razvojem medicine i tehnologije, mogućnostima suportivnog liječenja i poboljšanjem kvaliteta zdravstvene njege reduciran je mortalitet, ali je porastao broj hroničnih bolesnika koji zahtijevaju intenzivnu njegu. Dolazi do promjena u odnosu prema tim bolesnicima zbog snažnog pritiska porodi-

NON-INVASIVE MECHANICAL VENTILATION IN CHILDREN

H. Sejdin, M. Ćurčić
Clinic for Children's Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

In the intensive care departments, together with the intensive drug treatments, it is possible to maintain good vital functions that are more or less endangered to a certain degree by causes and disorders of a different nature. Mechanical ventilation of the lungs, over the course of a long history, has gone through various stages that have been connected to the technological and scientific development of their time. Thanks to modern technology, better treatment options and health care, mortality has been reduced, but that has also increased the number of children born with chronic lung disease that require respiratory support. As always with new situations emerging, there are numerous ethical, economic and medical problems. **Goal:** Present the importance of a medical nurse / technician in health care with non-invasive mechanical ventilation patients. **Material and methodes:** A retrospective analysis of nursing documentation has been done, as well as the history of illness and departmental protocol of the Intensive Care Unit of the Clinic for Children's Diseases has been done in the period from 01.01.2017 to 31.12.2017. **Results:** In the observed period, 462 patients were hospitalized in the Intensive Care and Nursing Department, of which 132 (28.5%) of the patients required mechanical ventilation. Of the total number of patients on mechanical ventilation, 32 (24.2%) patients were subjected to one of the models of non-invasive mechanical ventilation. There were 8 patients with pediatric age, 4 boys and 4 girls, and 24 patients were neonatal age was, 10 males and 14 females. **Conclusion:** The development of medicine and technology, the possibilities of supportive treatment and the improvement of the quality of health care has reduced mortality, but the number of chronic

ce za produženjem života svoje teško bolesne djece, zbog jačanja sistema zdravstvene zaštite, porasta ekonomskog standarda i opšteg stava "za život".

Ključne riječi: Neinvazivna mehanička ventilacija, zdravstvena njega, dijete

patients requiring intensive care has increased. There is a change in attitude towards these patients due to the strong pressure from the family to prolong the lifes of their very ill children, due to the strengthening of the health care system, the rise in economic standards and the general attitude of "living".

Key words: Non-invasive mechanical ventilation, health care, child

EFIKASNOST KONTROLE INTRAHOSPITALNIH INFEKCIJA

N. Selimhodžić, Dž Ostrvica
JZU UKC Klinika za dječije bolesti Tuzla

Intrahospitalna infekcija (IHI) se definiše kao bolest koja se razvila nakon 48 sati boravka u bolnici, a nije postojala, niti je bila u fazi inkubacije u momentu prijema radi ispitivanja i /ili liječenja. Procjenjuje se da se bolničke infekcije javljaju kod 5-10 % hospitaliziranih bolesnika. Izazivači IHI mogu biti gotovo svi mikroorganizmi: bakterije, virusi, gljivice i paraziti. Bitne karakteristike bakterija izazivača IHI su: rezistencija na antibiotike, pojava zavisnosti od antibiotika i otpornost na dezinfekciona sredstva. **Cilj rada:** Predstaviti značaj sprovođenja mjera higijensko-epidemiološke zaštite po usvojenim standardiziranim politikama i procedurama JZU UKC Tuzla kroz proces zdravstvene njege u Odjeljenju za intenzivnu terapiju i njegu Klinike za dječije bolesti. **Materijal i metode:** Urađena je retrospektivna analiza rezultata mikrobioloških ispitivanja na Odjeljenju intenzivne terapije i njege Klinike za dječije bolesti u periodu od 01.01. 2017 godine do 31.12. 2017 godine. **Rezultati:** U posmatranom vremenskom periodu u Odjeljenju za intenzivnu terapiju i njegu hospitalizirano je 462 pacijenta od kojih su najčešće uzeti bris uha, pupka, grla i hemokultura. Kod osoblja su najčešće uzimani brisevi ruku i slušalica te brisevi radnih površina, aparata i opreme. Ukupno je uzeto 976 analiza kod pacijenata,

EFFICIENCY OF CONTROL IN INTERHOSPITAL INFECTIONS

N. Selimhodžić, Dž. Ostrvica
Clinic for Children's Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Interhospital infection (IHI) is defined as a disease that had spread after the 48 hours stay in the hospital, that had not been there previously, nor was in incubation durring admition. It is estimated that hospital infections happen in 5-10% of patients. Causes of IHI can be almost any microorganizms: bacteria, viruses, fungis and parasites. Important characteristics of bacteria that cause IHI is: resistance to antibiotics, possibility of developing an addiction to antibiotics and a restance to disinfectants. **Goal:** To show the inmportance of maintaining nesseccery precautions in sanitary-epidemiological protection established by the standardized policy and procedures of JZU UKC Tuzla that has been adapted in the process of care giving in the Department of Intesive Care and the health of the Children Clinic. **Material and methodes:** We did a retrospective analasys of the results of the microbiological studies conducted in the Department of intesive care and treatment in the Childrens clinic from 01.01.2017 to 12.31.2017. **Results:** During the observed period, 462 patients were hospitalized in the Intensive Care and Nursing Department and most of them got regular ear, belly button and throat swabs including a hemoculture. With the personell arm and ste-

239 (24,4%) analiza je pozitivno, a najčešći izolovani mikroorganizmi su Koagulaza negativan staphilococcus, pseudomonas aereginosa, klebsiella pneumoniae i mikroorganizmi iz porodoce acinetobactera. Na odjeljenju je uzeto 112 briseva od osoblja, sa radnih površina i opreme od čega su bile 38 (33,9%) pozitivne kulture. Na uzorcima uzetim od osoblja – bris ruku, ukupno 32(28,5%) najčešće je izolovan Koagulaza negativan staphilococcus, a iz uzoraka uzetih sa aparata i radnih površina, ukupno 80(71,4%) najviše se javlja Pseudomonas i Koagulaza negativan staphilococcus. **Zaključak:** Prevencija i kontrola intrahospitalnih infekcija je jako kompleksan problem i zahtijeva veliku odgovornost zdravstvenih radnika. Dobro organizovani zdravstveni sistem i ustanova su svjesni da se svaki novac potrošen na kontrolu infekcija višestruko isplati, jer sprječavanje i suzbijanje bolničkih infekcija je sastavni dio brige o zdravlju koji, ako se neadekvatno provodi ruši ugled cjelokupnom zdravstvenom sistemu. Znanje, iskustvo i praksa utiču na poboljšanje kvaliteta preveniranja i kontrole infekcije u kliničkim odjeljenjima, kao i na educiranje pacijenata u oblasti higijensko - epidemiološke zaštite.

Ključne riječi: Intrahospitalna infekcija, prevencija, kontrola

toscope swabs are most common, including equipment and working surfaces. A total of 976 analyzes were performed in patients, 239 (24.4%) were positive, and the most commonly isolated microorganisms were Coagulase negative staphylococcus, pseudomonas aereginosa, klebsiella pneumoniae, and microorganisms from the family of acinetobacters. On the department 112 swabs were taken from personell, work sufraces and equipment and 38 (33,9%) were positive. From the collected samples – hand swabs, a total of 32 (28.5%) was most frequently isolated coagulase negative Staphylococcus, from samples taken from the machine and the working area, a total of 80 (71.4%) were mostly Pseudomonas and coagulase negative Staphylococcus. **Conclusion:** Prevention and control of intra-hospital infections is a very complex problem and requires great responsibility of health workers. A well-organized health system and institution are aware that any money spent on controlling infections is not a waste in many ways because the prevention and suppression of hospital infections is an integral part of health care that, if inadequately implemented, destroys the reputation of the entire health system. Knowledge, experience and practice influence the improvement of quality of prevention and control of infections in clinical departments, as well as the education of patients in the field of hygienic and epidemiological protection.

Key Words: Interhospital infection, prevention, control.

PRIMJENA COUGH ASSIST KOD DJECE SA NEUROLOŠKIM OŠTEĆENJIMA U HOSPITALNIM USLOVIMA

M. Spahić, R.Šiljegović, A.Pašić
JZU UKC Klinika za dječije bolesti Tuzla

COUGH ASSIST sistem je neinvazivna terapija koja stimulira kašalj, pri udisaju proširuje pluća,a pri izdisaju usisava sekret. Koristi se kod pacijenata koji imaju neuspješno iskašljavanje, kao i kod djece sa: dječijom paralizom, mišičnom distrofijom, ozlijedom kičmene moždine, spinalnom mišičnom atrofijom. **Cilj rada** je prikazati značaj pravilne upotrebe aparata, pravilne edukacije kao i način na koji Cough ssist sistem pomaže u mobiliziranju i eliminaciju sekreta iz disajnih puteva u djece sa neurološkim oštećenjem. **Materijal i metode:** Urađena je retrospektivna analiza sestrinske dokumentacije i bolničkog protokola Odjeljenja za pulmologiju i kardiologiju Klinike za dječije bolesti. Analizirani su podaci u periodu od 01.01.2016 do 31.12.2017 godine. **Rezultati**: U analiziranom vremenskom periodu na Odjeljenju za pulmologiju i kardiologiju hospitalizirano je ukupno 870 pacijenata. Od ukupnog broja liječenih 24 pacijenta odnosno 2,75 % su uz ranije dijagnostikovanu neurološku disfunkciju imali raspiratorne smetnje sa prijetećom respiratornom insuficijencijom.Od toga je bilo 16 pacijenata ženskog spola-66,67 % i 8 pacijenata muškog spola-33,3 %. Upotrebom Cough assist sistema kod ovih pacijenata uočili smo lakšu i bržu mobilizaciju i eliminaciju sekreta iz gornjih i donjih disajnih puteva, povoljniji klinički tok, brži oporavak i kraći period hospitalizacije. **Zaključak:** Cough assist pospješuje iskašljavanje sekreta tako da disajni putevi budu čisti, što smanjuje rizik za nastanak infekcije.Namijenjen je za periodične terapijske preglede, dizajniran je da bude jednostavan za upotrebu. Pomaže djeci sa oštećenjem funkcije disajnih puteva.

Ključne riječi: Cough Assist, neuromišićna oboljenja.

APPLICATION OF COUGH ASSIST TO CHILDREN WITH NEUROLOGICAL DYSFUNCTIONS IN HOSPITAL CONDITIONS

M. Spahić, R.Šiljegović, A.Pašić
Clinic for Children's Diseases, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

COUGH ASSIST system is a non-invasive cough stimulation therapy, which enlarges the lungs when inhaled, and at the exhalation it aspirates the secretion. It is used on patients with unsuccessful coughing, as well as to children with: childhood paralysis, muscular dystrophy, spinal cord injury, spinal muscular atrophy. **Golas:** To demonstrate the importance of proper appliance use, proper training, and how the Cough assist system helps to mobilize and eliminate secretive disabilities of children with neurological disabilities. **Materials and methods:** A retrospective analysis of nursing documentation and hospital protocols of the Department of Pulmology and Cardiology of the Clinic of Children's Diseases was done. Data were analyzed in the period from January 1, 2016 to December 12, 2017. **Results:** In the analyzed time period, a total of 870 patients were hospitalized at the Department of Pulmonology and Cardiology. Out of the total number of treated patients 24 of them, or 2.75%, with previously diagnosed neurological dysfunction, had discontinuous disturbances with a threatening respiratory failure. There were 16 female patients-66.67% and 8 male patients-33.3%. With the use of the Cough Assist system in these patients, we noticed easier and faster mobilization and elimination of upper and lower airway secretions, more favorable clinical course, faster recovery, and a shorter hospitalization period. **Conclusion:** Cough assist improves expectoration of the secretion so that the airways are clean, which reduces the risk of infection. It is used for periodic therapeutic examinations and it is designed to be easy to use. It helps children with respiratory tract disorders.

Keywords: Cough Assist; neuromuscular diseases

POROĐAJ U SPINALNOJ ANALGEZIJI I EPIDURALNOJ ANESTEZIJI SA ASPEKTA SESTRINSTVA

L. Subašić, E. Mandžukić
JZU UKC Tuzla, Klinika za ginekologiju i akušerstvo

Uvod: Porođaj u epiduralu i spinalu podrazumjeva oslobađanje od bola i besprijekornu saradnju tima koji učestvuje u porođaju. Neki porođaji se zbog primjene epiduralne anestezije odvijaju sporije, dok su drugi brži zato što je žena opuštenija. Važno je da trudnica svo vrijeme porođaja aktivno učestvuje i prati uputstva medicinskog tima koji vodi porođa. Trudnica je potpuno svjesna tokom porođaja, a zbog izostanka bolova može se odmorit i opustiti. Pojačan nadzor majke i djeteta daje trudnici veću sigurnost u osoblje. Profesija babice je profesija intime. Utemeljena je na solidarnoj pomoći među ženama. Babica u porodilištu treba da bude savjesna i sposobna da samostalno obavlja poslove,da saradjuje s drugim članovima tima i prepozna kada se javi problem koji prevazilazi okvire njene nadležnosti. Bezbolan porođaj u regionalnoj anesteziji za sve buduće majke obezbjeđuje sigurnoost, udobnost i posvećenost. **Cilj:** Naglasiti značaj, primjenu i provođenje epiduralne anestezije i spinalne analgezije sa aspekta sestrinstva. Cilj bezbolnog porođaja u epiduralu i spinalu je da umjesto traumatičnog iskustva kakav porođaj nekad zna biti napravi što ljepši događaj i prekrasan osjećaj rađanja novog života kojeg će majka pamtiti kao najljepše iskustvo. Bezbolan porođaj u regionalnoj anesteziji za sve buduće majke obezbjeđuje sigurnoost, udobnsot i posvećenost. **Zaključak:** Razdoblje trudnoće i porođaja pruža snagu, samopouzdanje i učvršćuje porodične veze. Zadatak babice je da omogući porodilji da porođaja pamti kao pozitivno i prekrasno iskustvo, aktivno učestvuje u istom uz pomoć epiduralne anestezije i spinalne analgezije koja omogućava bezbolan porođaj. Biti babica je jedinstven poziv koji

CHILD BIRTH WITH SPINAL ANALYSIS AND EPIDURAL ANESTHESIA FROM ASPECT OF NURSING TEAM

L. Subašić, E. Mandžukić
Clinic for Gynecology and Obstetrics, University Clinical Center Tuzla, Tuzla, Bosnia and Herzegovina

Introduction: Epidural and spinal childbirth involves the pain relief and the flawless cooperation of the participating team. Some births are slower due to the application of epidural anesthesia, while others goes faster because the pregnant woman is more relaxed. It is important that the pregnant woman is actively participates all the time during childbirth and following the instructions of the medical team that conducts process. Advantages of these types of anesthesia are that pregnant woman is concius of process she is going thru. The pregnant woman is also fully aware of the childbirth, and because of the pain absence, she can rest and relax. Intensive control of mother and child makes pregnant women to have more confidence in medical team during the childbirth. Being a nurse who is helping during childbirth is an intimate profession. It is based on solidarity assistance between women. The nurse in the maternity ward should be responsible and able to do the job independently, to cooperates with other team members and recognizes when a posible problems exceed her jurisdiction. The painless childbirth in epidural anesthesia for all future mothers ensures safety, comfort and dedication. **Goal:** To emphasize the importance, application and implementation of epidural anesthesia and spinal analgesia from the aspect of nursing. The goal of painless delivery in the epidural and spinal is that instead of a traumatic experience, what childbirth sometimes can be, make it the most beautiful event and a wonderful feeling of a new life that will be remembered by the mother as the most beautiful life

koji traži ono najljepše u ljudskom biću humanost i predanost pozivu.Ta briga uključuje preventivne mjere, promociju prirodnog porođaja, prepoznavanje komplikacija kod majke i djeteta, pristup medicinskim oblicima odgovarajuće pomoći, te provođenje hitnih postupaka u slučaju opasnosti.

Ključne riječi: Porođaj, epidural, spinal.

experience. Epidural anesthesia ensures painless childbirth, safety and dedication for all future mothers. **Conclusion:** The period of pregnancy and childbirth provides strength, self-confidence, and strengthens family relationships. Nurse's task is to enable the mother to remember the childbirth as a positive and wonderful experience. Also, with the help of epidural anesthesia and spinal analgesia that provides painless childbirth, ensres the nurse to actively participate in the process. Being a nurse is a unique call that brings out the most beautiful feelings from human being and ask for commitment to that call. This call includes preventive measures, the promotion of natural birth, recognition of complications that can occure with pregnant mothers and children, access to medical forms of appropriate assistance and implementation of emergency procedures in case of any problems during the childbirth.

Key words: Delivery, epidural, spinal.

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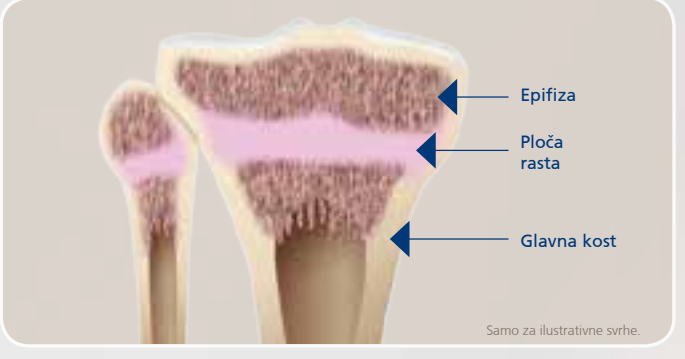
Ploče rasta su poput štoperice koja je ugrađena u tijelo. Onog trenutka kada odbrojavanje završi, završava i rast vašeg djeteta.[1]

Zbog toga je važno prepoznati usporeni rast što je ranije moguće. Usporeni rast može biti simptom medicinskog stanja koje ne utiče samo na visinu vašeg djeteta.[2,3] Redovno mjerenje rasta i brzine rasta, svakih 6 do 12 mjeseci, može pomoći ranom otkrivanju problema koji utiču na rast.[4]

Većina rasta djeteta odvija se u dugim kostima, kao što su kosti nogu. Unutar ovih kostiju nalazi se mekše područje, koje se naziva ploča rasta i odvaja epifizu od glavne kosti. Kako glavna kost i epifiza postaju veće, ploča rasta postaje manja. Na kraju ploča rasta nestaje, a epifiza i glavna kost se spajaju. Onog trenutka kada dođe do spajanja, proces rasta je završen i kažemo da je došlo do zatvaranja epifiza.[5,6]



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