ABSTRACT&REFERENCES

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CESAREAN SECTION IN THE PERINATAL CENTER OF III LEVEL – INDICATIONS AND RISK FACTORS

p. 4-8

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In the structure of labour, the frequency of caesarean section should not exceed 15 %. Therefore, it is extremely important to clearly define clinical situations in which caesarean section can be abandoned and, conversely, identify pregnant women in whom it is advisable to plan a caesarean section to prevent urgent situations.

The aim of the study *was to study the structure of indications for emergency abdominal delivery in a level III medical department – the urban perinatal center of Kharkov to optimize childbirth tactics.*

Material and methods. *Clinical and statistical analysis of pregnancy and childbirth histories of 550 women in labour who gave birth in the Kharkov city perinatal center during 2018–2019 was performed. The structure of the indications and the caesarean section frequency was analysed depending on clinical and anamnestic data using descriptive statistics methods, χ^2 criterion and calculation of the odds ratio (OR) using the PSSP statistical software package.*

Results*. The highest OR values were in diabetes mellitus, burdened gynecological history and cardiovascular diseases (OR more than 5.0). Gestational hypertension, first labour, genital tract infections, nervous system diseases, preeclampsia, obesity of the digestive system diseases, large fetus and vegetative-vascular dystonia (OR from 2.108 to 4.113) had a lesser effect, myopia, first pregnancy, and late reproductive age (OR from 1.619 to 1.958).*

Conclusion*. The most common causes of emergency caesarean section were weak labour (29.5 %) and fetal distress (13.2 %). In 20.9 % of women – concomitant diseases of the mother and large fetus. Indications for emergency caesarean section most often occurred in women in labour with diabetes mellitus, weighed down by a gynecological history and with cardiovascular diseases*

Keywords*: complications of childbirth, caesarean section, indications, obstetric and gynecological history, extragenital pathology, risk factors, odds ratio*

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EFFECTIVENESS OF ARTERIAL HYPERTENSION CONTROL USING AMBULATORY BLOOD PRESSURE MONITORING IN PATIENTS IN THE REMOTE PERIOD AFTER MYOCARDIAL INFARCTION AND ISCHEMIC STROKE

p. 8-14

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Arterial hypertension is one of the most important modified risk factors and its adequate control is a cornerstone of primary and secondary prevention. On the other hand, excessive lowering of blood pressure can be harmful, especially in patients with a history of ischemic events.

The aim: *To evaluate daily blood pressure fluctuations with ambulatory blood pressure monitoring in patients with controlled hypertension according to office measurements in the remote period after myocardial infarction and ischemic stroke*

Materials and methods: *The study involved 64 patients with hypertension in remote period (at least 6 months) after myocardial infarction (38 patients) and ischemic stroke (26 patients) with systolic blood pressure during the last three months and at least two visits. in the range of 120-139 mm Hg and diastolic blood pressure 70–89 mm Hg. Patients with valvular heart disease, severe arrhythmias, significant heart failure (NYHA III–IV) were not included in the study.All patients underwent daily blood pressure monitoring. According to the recommendations of ESC/ESH in 2018, the optimal blood pressure control was considered to be the average daily blood pressure after myocardial infarction 130–140/70–79 mm Hg. at the age of >65 years, 120–130/70–79 mm Hg at the age of ≤65 years; after ischemic stroke 120–130/<80 mm Hg. All values below the optimal levels were considered to be low blood pressure, higher than optimal – high blood pressure. Particular attention was paid to excessive reduction of blood pressure with the calculation of the number of excessive reductions and their duration during the day.*

Results: *The average daily blood pressure values corresponded to the definition of optimal in only 23.4 % of patients with ischemic events. In 63.2 % of patients after myocardial infarction, the mean daily values of systolic blood pressure and diastolic blood pressure were lower than recommended, and in patients after ischemic stroke, this number was significantly lower – 23.1 %. Conversely, in more than half of the patients after ischemic stroke (53.6 %) the average daily blood pressure levels exceeded the recommended ones. In patients after myocardial infarction, this number was only 13.2 %.*

Excessive reductions in blood pressure were recorded in 58 of 64 patients (90.6 %), in 54 persons such episodes were observed during the day (84.3 %). Persistent (over 1 hour) excessive decrease in blood pressure was registered in 16 people (25.0 %), 8 of whom had persistent excessive blood pressure reductions ≥2/day (12.5 %). Predictors of excessive blood pressure lowering were males, myocardial infarction, beta-blockers.

Conclusions: *Patients with hypertension after myocardial infarction or ischemic stroke require regular monitoring of blood pressure, even in cases where blood pressure is within the recommended range for some time. It is necessary to take into account the risk not only of increasing but also of excessive lowering of blood pressure*

Keywords: *arterial hypertension, ambulatory blood pressure monitoring, myocardial infarction, ischemic stroke, blood pressure, arterial hypotension*

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EFFICIENCY OF DOUBLE FIXED COMBINED THERAPY IN PATIENTS WITH ARTERIAL HYPERTENSION AND ASSOCIATED THYROTOXICOSIS AFTER ONE YEAR OF TREATMENT

p. 15-21

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The aim: *to evaluate the effectiveness of different fixed double antihypertensive combinations based on the results of outpatient monitoring of arterial pressure and to analyze their effect on central arterial pressure and cardiac remodeling in patients with arterial hypertension and thyrotoxicosis.*

Materials and methods: *patients with hypertension and TT who were included in the study were divided into groups using the blind envelope method with compensated TT: patients of group 1 were prescribed a fixed combination of perindopril with indapamide, group 2 – a combination of perindopril with amlodipine. Patients with uncompensated TT were prescribed a combination of bisoprolol with perindopril. The groups were statistically comparable in terms of age, duration of AH and TT, SBP and DBP levels. The observation of the patients lasted 12 months. After a year of follow-up, AMAD and EchoCG were performed in order to study AHT in patients with hypertension and TT. The patients were consulted by a cardiologist and endocrinologist.*

Results: *After 6 months of treatment, 8 (16 %) patients were excluded from the study, of which 6 (75 %) due to the need for surgical treatment and did not achieve euthyroidism, 2 (25 %) due to the need for antiarrhythmic therapy. Studied double fixed combinations effectively reduce blood pressure (BP) according to the results of ambulatory blood pressure monitoring (ABPM).*

Conclusions: *The fixed combination of perindopril with indapamide, perindopril with amlodipine, bisoprolol with perindopril provided a decrease in both blood pressure according to ABPM results and central pressure, however, this was not accompanied by a significant improvement in the structural and functional state of the heart*

Keywords: *cardiac remodeling, thyrotoxicosis, arterial hypertension, fixed combination antihypertensive therapy, ambulatory blood pressure monitoring*

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KERATITIS CAUSED BY *PSEUDOMONAS AERUGINOSA*: TREATMENT IN THE EXPERIMENT

p. 21-28

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*The **aim of the study** was to investigate the effectiveness of treatment of keratitis caused by Pseudomonas aeruginosa using official ophthalmic forms of antibiotics, which are effective against the pathogen.*

***Materials and methods.** Adult 36 rabbits weighing 3–3.5 kg were undergone the causing of purulent keratitis by applying a clinical strain of P. aeruginosa as a suspension of one-day culture of the microorganism at a concentration of 5×10^8 CFU/ml on the partially de-epithelialized (approximately 1 cm^2) cornea followed by coating for 24 hours with soft contact lens made of belafilcon A (water content: 36 %, oxygen permeability DK/t:110.0). In half of the cases, microbial biofilms were pre-grown on the contact lens surfaces via incubation into the broth culture of P. aeruginosa strain.*

The treatment of keratitis was performed with ocular official forms of antibiotics: levofloxacin 0.5 % (5 mg/ml), ciprofloxacin 0.3 % (3 mg/ml), tobramycin 0.3 % (3 mg/ml). Their effectiveness against the strain of P. aeruginosa was previously proven in vitro. The animals were divided into three corresponding as for severity of keratitis groups, in each of which treatment was performed with one of the three above antibiotics. In half of the cases within each group, the antibiotic was combined with the ocular official form of decamethoxine 0.02 % (0.2 mg/ml). The antibiotics were used in the mode of the most frequent instillation for the first 2 days after the onset of purulent keratitis, then 5 and 4 times a day.

The assessment included evaluation of clinical signs, culturing, ophthalmological examination of the cornea with fluorescein test and photofixation. Animals were removed from the study on days 7^{th}, 10^{th}, 14^{th} (depending on the term of epithelialization of the affected cornea).

***Results.** Totally, 36 cases of purulent keratitis caused by P. aeruginosa in rabbits were modelled: 8 moderate (22.2 %), 13 semi-severe (36.6 %), 15 – severe (41.7 %).*

Regardless of the chosen antibiotic, 10–12 hours after removal of the infected contact lens and the start of treatment, there was mostly a burst enhancement of the inflammatory process. Subsequently, the inflammatory signs showed a gradual attenuation with complete corneal epithelialization for 7^{th}–8^{th} days (for moderate keratitis), 10^{th}–12^{th} days (for severe and semi-severe in Group I and Group III) and (12^{th}–14^{th} days for severe and semi-severe in Group II). In comparison with the Group I (levofloxacin 0.5 %), the reducing of the corneal inflammation and lesion epithelialization within the Group II (ciprofloxacin 0.3 %), was 1–2 days delayed. The use of 0.3 % tobramycin (Group III) provided the highest control of purulent inflammation during the first three to four days, but further there was a slowdown in the positive dynamics and delayed epithelialization compared with Group I. For all study groups, the use of combination antibiotic therapy with decamethoxine was accompanied by acceleration in regression of purulent-inflammatory lesions, especially due to a decrease in conjunctival response and pyorrhea.

Among the outcomes, in most of cases (69.5 %) there were areas of corneal opaque turbidity of various sizes. Total leucoma was noted in more than a third of cases; always due to severe keratitis. It was managed to avoid the complications that could lead to eye loss (corneal abscess, perforation, malacia) in all animals. The culturing from the surface of the eye has shown a decrease from 100 % to 63.9 % in presence P. aeruginosa after 48 hours and the whole pathogen disappearance after 3 days of treatment. However, in 11 of 15 severe keratitis (30.6 % of total observations) microbiological tests of the cornea, obtained after removal of animals, were positive as for P. aeruginosa even after complete lesion epithelialization.

Conclusions. *Treatment of experimental keratitis caused by P. aeruginosa, with antibiotics, to which the sensitivity of pathogen is proven, in the mode of the earliest and most frequent instillations on the first 48 hours in combination with removal of purulent masses provides reducing of inflammation, restoring of cornea surface and prevents the most serious complications, e. g. corneal perforations and keratomalacia.*

Early and active antimicrobial treatment with effective drugs led to the elimination of P. aerugenosa from the ocular surface in the first 2–3 days. However, in 30.6 % of cases there was no complete eradication of the pathogen from the cornea.

The choice of antibiotic from those, to which the sensitivity of P. aerugenosa is proven, did not have a significant influence on treatment outcome. Concomitant use of decamethoxine makes better effect and somewhat improves the results

Keywords: *experimental keratitis, Pseudomonas aeruginosa, treatment, levofloxacin, ciprofloxacin, tobramycin, decamethoxine*

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STUDY OF THE LACTOSE INTOLERANCE GENETIC ASPECTS AMONG THE POPULATION AND PATIENTS WITH HIP FRACTURE IN EASTERN UKRAINE

p. 29-33

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About 75 % of the world's population loses ability to lactose tolerance in adulthood. The study of tolerance to lactose (LT) or lactase persistence (LP) in Ukrainians is necessary to identify the association of this trait with multifactorial pathologies, the formation of risk groups and food culture development.

***The aim** of this study was to evaluate the genetic aspects of lactose deficiency in population and its relation with human pathologies on the example of a hip fracture.*

***Material and methods:** lactose intolerance phenotype was found in 9.7 % of Ukrainians and lactose persistence amounted to 69.4 %. In group of patients with fractures of the proximal femur frequencies were: 13910T – 0.34, 13910C – 0.66, 22018A – 0.35, 22018G – 0.65. Distribution of genotypes was 0 % :67.6 % : 32.4 % for TT:CT:CC and 2.9 % : 64.7 % : 32.4 %, for AA:GA:GG. Deviation from the Hardy-Weinberg equilibrium was not s observed.*

***Results:** when analyzed genotypes for both SNPs, we found the ratio – CTAA:CTGA:CCGA:CCGG being 2.9 % : 61.7 % : 2.9 % : 32.5 %. The linkage disequilibrium was estimated, D' (r^2) for SNPs analyzed was 0.209 (0.554). A half of patients had osteoporosis or osteopenia (n=50.0 %), but these pathologies were not observed in patients with the TTAA genotype. The parameters BMD of CTGA patients were 4049.8±38.7 and 4109.6±30.0 for CCGG patients.*

***Conclusion:** all patients with osteoporosis had a genotype CTGA, average value of BMD was 3795.6±43.8. CTGA-patients had following gastrointestinal tract disorders: gastritis (33.3 %), peptic ulcer (9.5 %), duodenal ulcer (9.5 %), stomach cancer (9.5 %). Heterozygous genotypes significantly increase five times the risk of gastrointestinal pathology in patients with fractures of the proximal femur*

***Keywords:** lactase persistence, lactose intolerance, hip fracture, osteoporosis, genotypes, bone mineral density*

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RADIONUCLIDE DIAGNOSTICS OF JOINT INJURY IN PATIENTS WITH DIABETES

p. 34-40

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There are very few convincing effective ways of early diagnosis of joint lesions today. Radiological changes in the early stages of the disease are absent, other laboratory tests are not specific and do not always correlate with the activity of the inflammatory process.

The aim *of our work was to study with the help of radionuclide method the state of arterial and venous blood flow, the presence of inflammatory processes in the knee and ankle joints in patients with type 1 and 2 diabetes mellitus.*

Materials and methods*. 152 patients with diabetes were examined. Depending on the type of diabetes, patients were divided into two groups –58 patients were with type 1 diabetes (19 men and 39 women), with type 2 diabetes – 94 patients (19 men and 51 women). The mean age of patients in the type 1 diabetes mellitus was 42.3±1.8 years, the duration of diabetes mellitus was 21.1±1.3 years. In the group of type 2 diabetes mellitus, the average age of patients was 61.3±1.0 years, the duration of diabetes mellitus was 13.1±0.9 years. Among the examined patients with type 1 diabetes mellitus, arthropathy was diagnosed in 34 (58.6 %), the control group was patients without joint damage – 24 (41.4 %). In patients with type 2 diabetes mellitus arthropathy was found in 68 (72.3 %) subjects, joint pathology was not in 26 (27.7 %) patients. The method of radionuclide diagnostics of the lower extremities consisted of two methods: radionuclide angiography and radionuclide scintigraphy.*

Results*. At carrying out radionuclide researches of hemodynamics at patients with a diabetes mellitus 1 type with arthropathies in comparison with patients without defeat of joints there are no changes of a blood-groove in vessels of large and average calibre and also arterioles and capillaries of lower extremities in the presence of the expressed venous outflow disturbances. For patients with type 2 diabetes mellitus with arthropathies, a significant slowing of blood flow velocity in large and medium-sized vessels, as well as arterioles and capillaries was found, which is accompanied by impaired venous outflow.*

Conclusions*. The applied method of radionuclide diagnostics to assess the state of blood flow and the presence of diabetes-associated arthropathy of the knee and ankle joints with a single injection of radiopharmaceutical is one of the most informative methods of early diagnosis of this pathology, and disorders of venous outflow may be a differential criterion for diabetes-associated arthropathy in patients with type 1 and type 2 diabetes*

Keywords*: diabetes mellitus, diabetes-associated arthropathy, radioscintigraphy, vascular disorders, risk factors, hemodynamics*

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MICROHARDNESS OF FIBERGLASS – REINFORCED PHOTOCOMPOSITE MATERIAL UNDER DIFFERENT CONDITIONS OF LIGHT POLIMERIZATION

p. 40-44

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The aim*: to study in laboratory conditions the microhardness of a glass-fiber-reinforced photocomposite under different modes of light exposure at different times.*

Materials and methods*. The microhardness of the everX Posterior, GC glass-fiber-reinforced photocomposite was investigated on 60 samples using a PMT-3 microhardness meter on three sample surfaces within 1 hour, 1 day and 7 days after polymerization. Samples of a cylindrical shape with a height of 3 mm of group 1 were irradiated with the light flux of a photopolymerizer in the "soft start" mode, samples of group 2 were polymerized with light of constant high intensity 1400 mW/cm^2.*

Research results*. After 1 hour, the microhardness on the surface closest to the LED was 87.34±1.21 kgf/mm^2 in samples of group 1, 102.0±0.94 kgf/mm^2 ($p<0.05$) in group 2, and 70.98± ±1.23 kgf/mm^2 (the lowest indicator) and 90.65±1.12 kgf/mm^2 ($p<0.05$). After 1 day, on the nearest surface, the microhardness increased in the samples of group 1 to 97.03±1.25 kgf/mm^2, group 2 – to 114.61±1.13 kgf/mm^2 ($p<0.05$), on the most distant – up to 75.95±1.11 kgf/mm^2 and 99.83±1.24 kgf/mm^2 ($p<0.05$), respectively. At 7 days, the indicators on the first surface in group 1 were 104.64±1.23 kgf/mm^2, in 2 – 123.35±1.15 kgf/mm^2 ($p<0.05$), on the other surface – 80.25±1.48 kgf/mm^2 and 107.53± ±0.92 kgf/mm^2 ($p<0.05$). The growth of microhardness on these surfaces for the entire period was 16.5 % and 11.6 % in the samples of group 1, and 17.3 % and 15.7 % in group 2.*

Conclusions. *The light flux of constant high intensity provides statistically significantly ($p<0.05$) higher microhardness indices of the glass-fiber reinforced photocomposite on all surfaces of the samples than the light exposure in the "soft start" mode. In the direct restoration of teeth, it is necessary to reduce the thickness of the photocomposite layer for "soft start" polymerization*

Keywords: *glass-fiber reinforced photocomposite, microhardness, polymerization, luminous flux, intensity, "soft start"*

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ANALYSIS OF BLOOD GAS COMPOSITION INDICATORS IN PREMATURE BABIES WITH NEONATAL SEPSIS

p. 45-48

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The aim of the study *was analysis of oxygen status of patients with neonatal sepsis during monitoring of premature infants.*

Materials and methods. *Indicators of oxygen status of capillary blood were assessed in premature infants with neonatal sepsis who were treated at the Regional Perinatal Center in Khmelnytsky during 2017–2018. The study included mostly deeply premature babies, including those with extremely low weight. A full range of clinical and laboratory studies, including determination of oxygen status of capillary blood.*

Research results. *Our results allow us to conclude that while such indicators as pH, pO_2, BEb3, % SO_2 do not change significantly, the trouble can be detected using indicators such as $AdDO_2$, RI, PI, which reflect the state of oxygenation with impaired ventilation. -perfusion ratios, increased blood shunting and the processes of delivery and consumption of oxygen at the tissue level. The calculated indicator "PIP×FiO_2" was less sensitive to assess changes in the lungs and did not correspond to the clinical picture of the severity of the patient's condition.*

Conclusion*. Thus, the determination of $AdDO_2$, RI, PI capillary blood can be used as informative indicators for determining the oxygen status in premature infants, which is of significant practical importance in terms of limited monitoring of the gas composition of arterial blood*

Keywords: *neonatal sepsis, premature infants, oxygen status indicators, respiratory index*

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MODERN APPROACHES TO DIAGNOSIS AND TREATMENT OF EARLY-ONSET NEONATAL SEPSIS

p. 49-52

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Early-onset neonatal sepsis (EOS) remains the leading cause of morbidity and mortality, especially among premature babies. Therefore, accurate diagnosis, prompt monitoring of the course of the disease and an effective therapeutic strategy are a guarantee of improving the quality of medical care for newborns, as well as an important reserve for reducing perinatal losses.

The aim of the work *to summarize modern views on the diagnosis and treatment of early-onset neonatal sepsis in newborns with perinatal pathology.*

Results and their discussion. *An analytical review of modern literature data on problematic issues of EOS diagnostics is carried out. The approaches are stated and the main directions of EOS management at the present stage are formulated. It was revealed that the lack of a consensus definition of neonatal sepsis, the nonspecificity of clinical data is a limiting factor in the timely accurate identification of the septic process. Insufficient diagnostic value of existing laboratory tests leads to defects in the registry and monitoring of this disease, the inability to conduct an objective assessment of the existing epidemiological and microbiological situation in the health care system and the subsequent effective implementation of preventive measures.*

Conclusions. *In the conditions of modern scientific realities, none of the existing laboratory tests can sufficiently reliably confirm or deny the presence of EOS in a newborn child, which determines the search for new promising laboratory tests with high diagnostic and prognostic potential. The optimal treatment strategy for newborns with EOS is broad-spectrum antibiotics*

Keywords: *newborns, neonatal sepsis, early-onset neonatal sepsis, diagnosis, antibacterial therapy*

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ORGAN-SAVING AND RECONSTRUCTIVE PLASTIC SURGERY OF BREAST CANCER

p. 53-57

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Surgical treatment of breast cancer is an integral part of complex treatment. In recent years, the goal of treatment is not only to ensure long-term relapse-free and metastatic survival, but also a proper quality of life, which requires new approaches to surgery.

The aim *of the literature review was to analyze current trends in the development of methods of surgical treatment of the breast cancer and ways to improve immediate and late results.*

The results of the analysis and discussion*. Until recently, radical mastectomy was performed to treat breast cancer, which causes long-term lymphovenous complications and significantly*

impairs the quality of life of patients. In recent decades, there has been a development of breast cancer surgery in the direction of the introduction of organ-saving and reconstructive plastic surgery with the improvement of technology for their implementation. There is no generally accepted concept of the optimal method of surgical treatment, both in terms of the volume of the operation and the choice of the method of reconstruction.

***Conclusions**. The problem of choosing the optimal method of surgical treatment of breast cancer, which should provide oncological radicalism and at the same time a good cosmetic result remains unresolved and requires further research*

***Keywords**: breast cancer, surgical treatment, organ-saving operations, breast reconstruction, quality of life*

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