ABSTRACT&REFERENCES

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PREDICTION OF THE DEVELOPMENT OF ARTERIAL HYPOTENSION AT TURNING OF THE PATIENT TO THE PRONE POSITION ON THE BACKGROUND OF SPINAL ANESTHESIA

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When conducting spinal anesthesia (SA) in a prone position arterial hypotension may occur, which is due to anesthesia and the effect of the position itself on the blood flow. ***The aim of the research*** *was the development of a prognostic model for changes in hemodynamics in vertebrologic operations in prone position on the background of spinal anesthesia.*

Materials and methods*. Postural blood circulation reactions were studied in 144 patients of the orthopedic profile operated in the abdominal position under spinal anesthesia: in the position on the back, after 5 and 20 minutes after turning on the stomach. Previously (one day before surgery) the same reactions were studied without anesthesia.*

Results*. In 16.0±3.1 % of patients during SA, hemodynamic correction with α1-adrenomimetics was required after rotation to prone position. A randomized analysis of changes in hemodynamics before and during anesthesia revealed in these patients the stress of blood flow compensation, which was manifested when rotated to prone position without anesthesia in arterial hypertension and increased general peripheral vascular resistance. Under the influence of SA this compensation was suppressed, which led to instability of blood circulation. Significant risk of such a complication occurred in younger patients and with increased BMI. According to the results of the retrospective analysis, a mathematical model has been developed that allows calculating the prognostic index of hemodynamic instability (PING) and predicting hemodynamic instability during SA in prone position. The PING value can range from infinitesimal to 1.*

Conclusions*: before conducting surgical interventions in the prone position under SA it is expedient to preoperatively study postural blood flow reactions with the calculation of PING. With PING>0.5 you should refrain from conducting CA and choose another kind of anesthesia*

Keywords: *spinal anesthesia, hemodynamics, abdominal position, lumbar spine*

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MULTIMODAL ANALGESIA FOR LAPAROSCOPIC OPERATIONS IN GYNECOLOGY

p. 10-15

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Adequate postoperative pain relief is an integral part of anesthesia management. Postsurgical pain can be treated effectively with both strong analgesics and prevention of central sensitization.

Objective: *to evaluate the antinociceptive effect of the combined intraoperative use of ketamine and dexketoprofenafter elective laparoscopic gynecological surgery.*

Materials and methods: *80 females undergoing laparoscopic gynecological surgery with total intravenous anesthesia (TIVA) with propofol and fentanyl. Patients were randomly assigned into three groups depending on multimodal analgesia choice, matched by age, and the nature of surgical intervention. Demographic characteristics, anthropometric data, functional status, duration of surgery and anesthesia were similar in all groups. Group I patients (n=30) received TIVA with mechanical ventilation. Group II patients (n=25) received TIVAwith additional administration of subanesthetic doses of ketamine. Group III patients (n=25) received TIVA with additional administration of subanesthetic doses of ketamine and a single administration of 50 mg of dexketoprofen 30 minutes before the end of the surgery. The intensity of postoperative pain was evaluated by VAS at 1, 2, 6, 12 and 24 hours after surgery. Time of the first analgesic administration and the incidence of side effects were recorded.*

Results*: Estimates of the intensity of pain according to VAS at rest and on movement during the first 12 hours after surgery were significantly higher in group I compared with groups II and III ($p<0.05$). 1 hour after surgery the level of pain at rest and on movement was significantly higher in group II patients than in group III. The need for additional administration of analgesics after surgery was 53.3 % for Group I, 40 % for Group II, and 28 % for Group III.*

Conclusions: *Traditional general anesthesia (TIVA with propofol and fentanyl with mechanical ventilation) does not prevent moderate to severe postoperative pain in most patients. Intraoperative use of subanesthetic doses of ketamine reduces postoperative pain in early stages after laparoscopic gynecological surgery. Combined intraoperative use of low doses of ketamine (up to 0,5 mg/kg) and dexketoprofen (50 mg) provides the most effective analgesia during the first 12 hours after laparoscopic gynecological surgery, delays first injection of analgesics and reduces need for additional analgesics prescription*

Keywords: *postoperative pain, multimodal analgesia, ketamine, dexketoprofen*

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COMPARATIVE EVALUATION OF CHANGES IN LIPID PROLINE IN PATIENTS WITH Q-MYOCARDIAL INFARCTION COMPLICATED BY ACUTE HEART FAILURE WITH CARBOHYDRATE METABOLISM DISORDERS

p. 16-22

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The aim *was to study the characteristics of lipid metabolism disorders, its pathogenic significance and changes under the influence of lipid-lowering therapy in patients with acute Q-MI, complicated by acute heart failure against different types of hyperglycemia.*

Materials and methods. *There were surveyed 113 patients with acute Q-IM, complicated by acute heart failure against normoglycemia (n=26), hyperglycemia on admission (n=66), type 2 diabetes history (n=21) and 21 practically healthy individuals. After examining patients with hyperglycemia on admission, the following subgroups were distinguished: stress hyperglycemia (n=25), impaired glucose tolerance (IGT) (n=22), new-onset type 2 diabetes (n=19). Patients were determined the lipid profile, insulin level and insulin resistance index (HOMA-IR). For evaluating the effectiveness of the drug lipid-lowering therapy in patients with hyperglycemia on admission, there was conducted subanalysis by the drugs: atorvastitin subgroup – 31 patients (median age 66 (60; 79) years), average daily dose of 21.7±1.1 mg per os, rozuvastatin subgroup - 35 patients (median age 66 (56; 77) years), the average daily dose of 12.8±0.6 mg per os.*

Results. *Compared with the normoglycemia group, the HDL level on the first day was lower by 22 % (p=0.02) in the hyperglycemia on admission group, by 29 % (p=0.005) in patients with IGT and by 33 % (p=0.042) in patients with diabetes mellitus in history, the level of triglycerides – by 15 % (p=0.03) in the IGT subgroup. In the stress hyperglycemia subgroup, the level of total cholesterol on day 12 was higher by 21 % (p=0.027), and triglycerides by 26 % (p=0.043). In patients with hyperglycemia on admission HOMA-IR was 2.11 times higher (p=0.04), in patients with IGT 2.94 times (p=0.02), with new-onset type 2 diabetes 2.91 times higher (p=0.006) compared with normoglycemia. The level of total cholesterol in the atorvastatin subgroup decreased by 21 % (p=0.002), and in the subgroup of rosuvastatin by 11 % (p=0.0005); the level of LDL by 19 % (p=0.0005) and 17 % (p=0.0005), respectively.*

Conclusions. *The lipid profile of patients with type 2 diabetes mellitus in history was characterized by the greatest atherogenic potential. The highest HOMA-IR is registered in the IGT group. The best dynamics of lipid profile was found in patients with normoglycemia. The patients with hyperglycemia on admission, that were receiving atorvastatin, had greater reduction in total and LDL cholesterol levels, than patients, that were receiving rosuvastatin*

Keywords: *Q-myocardial infarction, acute heart failure, hyperglycemia on admission, lipid profile, insulin resistance*

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STRUCTURAL-FUNCTIONAL FEATURES OF THE HEART IN PATIENTS WITH ACUTE Q-MYOCARDIAL INFARCTION OF THE ANTERIOR WALL OF THE LEFT VENTRICLE IN THE PRESENCE OF PULMONARY HYPERTENSION

p. 23-27

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The aim *was to evaluate the structural and functional features of the heart in the acute myocardial infarction (AMI) of the anterior wall of the left ventricle (LV) in the presence of pulmonary hypertension (PH) for the development of more informative diagnostic markers, forecast predictors and improved treatment of patients.*

Materials and methods. *A total of 90 patients (53 men and 37 women) with acute myocardial infarction of the anterior wall of the LV (AMI AV) were examined in the intensive care unit for acute coronary insufficiency of the Communal Non-profit Enterprise "City Emergency and Ambulance Hospital" of the Zaporizhzhya City Council. Patients were divided into two groups: 55 patients with AMI AV with PH (mean age 70.65±1.83 years), 35 patients with AMI AV without HD (mean age 66.80±2.02 years). For all patients in the first three days after hospitalization, two-dimensional echocardiography was performed on the device "MyLab50" ("Esaote", Italy) according to the recommendations of the American Society of Echocardiography. For statistical data processing, statistical software package "Statistica 6.0 for Windows" (StatSoft Inc., No. AXXR712D833214FAN5) was used. The reliability of the differences in the groups was evaluated using the dual t-criterion of the Student for independent samples. To assess the convergence of the indicators, the χ2 criterion, corrected by Yeats,*

was determined. The reliability of the differences between the indices was confirmed at p<0.05.

Results. *In patients with AMI AV with PH in comparison with patients with AMI AV without PH, there was a significant decrease in ejection fraction (22.3 %; p<0.05), increase in myocardial mass index (by 18.3 %, p<0.05) and end systolic diameter of left ventricle (12.4 %; p<0.05), dilatation of left atrium (by 11.6 % (p<0.05), right ventricle (by 27.3 %, p<0.05) and right atrium (by 20, 9 %; p<0.05). In assessing the types of remodeling of the of left ventricle, it was found that in patients with AMI AV with PH was predominantly eccentric hypertrophy (90.9 %), which is significantly higher in comparison with the AMI AV without PH.*

Patients with AMI AV and PH have a significant acceleration peak E of mitral valve (by 34.4 %; p<0.05), an increase in the ratio E/A of mitral valve (by 61.1 %, p <0.05), the time of isovolumetric relaxation LV extension (on 13.9 %; p<0.05) and acceleration peak E of tricuspidal valve E (by 28.3 %, p<0.05) in comparison with patients without PH. According to the data of tissue dopplerography, patients with AMI AV and PH showed an increasing ratio E/E' of mitral valve (MV E/E') (by 46.5 %; p<0.05) and ratio E/E' of tricuspidal valve (TV E/E') (by 39.3 %; p<0.05) compared with patients without PH. In patients with AMI AV and PH there was a predominant type of diastolic dysfunction (40 % of cases), type of diastolic dysfunction with disturbance of relaxation (71.4 %) predominated in the group of AMI AV without PH.

Conclusions. *In patients with AMI AV pulmonary hypertension develops against the background of dilation of the left chambers of the heart with the formation of eccentric hypertrophy and systolic dysfunction of the left ventricle, overloading of the right chambers of the heart with an increase in the size of the right atrium and left ventricle. Patients with AMI AV with PH had a predominantly pseudonormal type of LV diastolic dysfunction with an increase in MV E/E' ratio and diastolic dysfunction of right ventricle, as evidenced by an increase in the ratio of TV E/E'*

Keywords: *Q-myocardial infarction, pulmonary hypertension, anterior wall of left ventricle, diastolic dysfunction*

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TREATMENT OF PATIENTS WITH ACUTE CORONARY SYNDROME AND ATRIAL FIBRILLATION

p. 28-36

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The aim *was to study the possible protective effect of drug therapy regarding the development of AF in patients with ACS and compliance with the standards of treatment of these patients in everyday clinical practice.*

Materials and research methods. *A study was conducted of 125 patients with ACS who were hospitalized with ACS to the*

center of percutaneous coronary interventions of the KNP of the Kharkiv Regional Council "Regional Clinical Hospital" for four years from 2015–2018, among which 65 had atrial fibrillation . The criterion for inclusion in the study was the presence of ACS; exclusion criteria were the presence of severe concomitant diseases (active oncological processes, chronic IV degree renal failure, etc.), heart defects, and the patient's refusal to participate in the study. In accordance with the Helsinki Declaration, all patients were informed about the aim, methods and design of the study and gave their consent to participate.

Patients were divided into groups according to the presence of AF. In group 1, patients with AF were combined, and patients who had AF for the first time during hospitalization for ACS were subgroup 1a (n=41); patients in whom AF was observed before the development of ACS were subgroup 1b (n=24). The second group consisted of patients without indications of AF in the history and during hospitalization (n=60).

***Results.** The majority of patients of the 1st group, namely, 92.3 %, had three or more points on the CHA2DS2-VASc scale of thromboembolic complications, while the greatest number of patients (n=41, 63 %) with ACS and AF were 4-5 points on the scale of risk of thromboembolic complications according to CHA2DS2-VASc. Most patients had a score of 0-1 on the bleeding risk scale. When evaluating drug therapy in patients with ACS, it was found that acetylsalicylic acid was administered to almost all patients with ACS, except for patients with concomitant bronchial asthma. The majority of patients with ACS, with or without concomitant AF, received clopidogrel as a double antiplatelet therapy along with acetylsalicylic acid. Anticoagulant therapy with the use of warfarin and new oral anticoagulants was more often prescribed to patients with 1b subgroups. Calcium antagonists were more frequently prescribed in patients of the 2nd group compared with the 1st (n1=4; 6.2 % vs n2=12; 20.0 %, p=0.0228). Statins were administered to hospitals in almost all patients, except for a few patients with intact coronary vessels. Prehospital administration of the loading dose of the P2Y12 inhibitor was more frequently recorded in the 1st group of patients as compared with the 2nd (n1=26; 40.0 % vs n2=13; 21.7 %, p=0.0292), at the same time among patients with 1a-subgroups with AF, which appeared for the first time, a significantly rarer prescription of the pre-hospital loading dose of the P2Y12 inhibitor was observed compared with the 1b-subgroup (n1a=11; 26.8 % vs n1b=15; 62.5 %, p=0, 0061). The majority of patients in all groups received ACE inhibitors / ARBs in basic therapy during the hospital period. The prescription of diuretics was more often registered among patients of the 1b-subgroup, which indicates a more severe course of CHF in this group of patients, which preceded the development of ACS. An increase in the frequency of triple therapy prescriptions among patients with AF over the years 2015–2018 was found, which corresponds to the existing modern standards of medical care regarding the appointment of combination anticoagulant and anti-platelet therapy to patients with AF and ACS. Unassigned triple therapy in the group of patients with AF, which originated for the first time, is associated with a greater frequency of registration of anemia in this group of patients.*

***Conclusion.** In accordance with the results of the study, all patients with ACS and AF have a high thromboembolic risk and require anti-coagulant therapy. In everyday clinical practice, in the discharge of patients with ACS and AF from hospital more than a third (38.1 %) patients are not recommended anticoagulant therapy, which does not comply with current recommendations. At the same time, patients are more often prescribed therapy who had AF before the development of ACS, while patients in subgroup 1a who have AF demonstrated in the acute period have less than half. In a retrospective analysis of extracts of case histories over the period 2015–2018, an increase in the frequency of triple therapy prescriptions among patients with AF was found. The most common cause of non-prescribing anticoagulants is anemia and a high risk of bleeding.*

***Keywords:** anticoagulant therapy, antiplatelet therapy, dual therapy, triple therapy, atrial fibrillation, acute coronary syndrome*

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MORPHOLOGICAL STUDY OF AORTA IN PATIENTS WITH ACUTE AORTIC SYNDROMES

p. 37-40

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Purpose of the study *is to investigate the morphology of the aortic wall in patients with acute aortic syndrome.*

Materials and methods*. The results of morphological study of aneurysmatic fragments (n-52), which were collected intraoperatively, each fragment were prepared on the basis of the SI "V. T. Zaycev Institute of General and Urgent Surgery AMSU", which were coloured with hematoxilin eosin, elastic fibers/ were incubated with antibodies to IgG, and with Apo-Alert DNA Fragmentation to determine apoptosis.*

Results. *Post-coarctation aneurysms had the following microscopic picture: a decrease in the medial layer with small fields of disorganization of elastic fibers and smooth muscle cells (SMC). The detection of apoptotic cells in the sections is minimal. In the group of acute aortic dissection aneurysms in 40 % of cases, the elastic fibers were fragmented, the SMC are chaotic with separate parts of the isiocytane medineocrine - a typical pattern for Marfan's syndrome. A microscopic study of thoracoabdominal aneurysms showed a significant decrease in the middle layer with the development of fibrosis. When counting the total number of cells, a decrease in smooth muscle cells was found on average by 54 %. The aneurysms of the abdominal aorta were characterized by major degenerative changes. Reducing the medial layer and fibrous changes were also the most significant. Reduction of the medial layer and fibrous changes were most significant in this group*

Conclusions. *All types of complicated aneurysms are characterized by insufficiency of smooth muscle cells in aortic wall. The study found that a decrease in the number of smooth muscle cells can occur due to apoptosis. There is a clear correlation with inflammatory infiltration by cells that produce apoptosis induction*

Keywords: *aorta, morphological studies, smooth muscle cells, aortic dissection, acute aortic syndrome*

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FEATURES OF EXISTING FUNCTIONAL DISTURBANCES IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE STAGE II IN THE PROCESS OF INTEGRATED THERAPY WITH THE USE OF TIOTROPIUM BROMIDE

p. 41-46

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The peculiarities of the disturbances of external respiratory function (ERF) in patients with the second stage of COPD, who received tiotropium bromide are presented.

***The aim of the study**. To evaluate the effect of the baseline therapy of COPD II degree of bronchial obstruction with the use of tiotropium bromide preparation on the parameters of external respiration.*

***Materials and methods**. We examined 151 patients with the second stage of COPD. Verification of the diagnosis and its formulation were performed on the basis of the order of the Ministry of Health of Ukraine № 555 dated June 27, 2013 «On Approval and Implementation of Medical-Technological Documents on Standardization of Medical Assistance in Chronic Obstructive Pulmonary Disease». The examination was performed prior to and on the 30th, 90th and 180th days of standard treatment combined with tiotropium bromide.*

***Research results**. The analysis of aggregate results showed that the highest efficacy was observed in patients who took tiotropium bromide during 180 days, for in this very period external respiratory function parameters maximally increase. Consequently, such a pronounced effect of the used drug tiotropium bromide as a composite basic treatment for stabilizing the function of external respiration in chronic obstructive pulmonary disease II degree, in our opinion, is due to the mechanism of action characteristic of the drug chosen by us, namely, the clear prolonged bronchodilator effect.*

***Conclusions**. Our treatment regimens have a pronounced influence on a number of important pathogenetic links in the course and progression of chronic obstructive pulmonary disease, especially in the initial stages, which clearly confirms the need for early detection of this pathology and early onset of its therapy. They are characterized by simplicity and accessibility, high clinical efficacy, the absence of adverse reactions and complications*

***Keywords**: chronic obstructive pulmonary diseases, tiotropium bromide, external respiratory function*

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