Conclusions. Ovarian torsion and its detorsion involve reactive oxigen species production, that determines lipid peroxidation. Controlled detorsion can diminish this process and decrease the level of MDA that is produced.
Key words: ovarian, torsion, malondialdehyde

264. EXPERIMENTAL MYOCADIAL INFARCTION AND INTERLEUKINE-6 MODIFICATIONS

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Introduction. The inflammatory response, manifested as acute necrosis, is induced by ischemia in infracted myocardium. Myocardial remodelling is one of the complications, which leads to arrhythmias and heart failure. Interleukine-6 (IL-6) is a cytokine involved in tissue remodelling, as well as in the pro- and anti-inflammatory response pathways. Post infarct it promotes myocyte hypertrophy and myocardial dysfunction. In addition, IL-6 inhibits cardiomyocyte apoptosis.
Aim of the study. To evaluate serum and homogenate IL-6 level in isoproterenol-induced acute myocardial infarction.
Materials and methods. Forty adult male rats (Ratta albicans) were divided into five groups: L1 – intact (n=11); L2 – control animals which were administrated NaCl 0.9% (n=11); L3 (n=6), L4 (n=6) and L5 (n=6) included the animals with experimental myocardial infarction, reproduced by injecting subcutaneously isoproterenol hydrochloride 100 mg/kg (one dose). Rats were anesthetized, and sacrificed at 6h, 24h and 7 days respectively. For IL-6 assessment, we use standard Rat IL-6 ELISA kit (Beijing 4A Biotech Co. Ltd). The results were analyzed by Kruskal-Wallis nonparametric test using SPSS version 23. Discussion
Results. The investigated groups have not presented any statistically significant difference neither in homogenate IL-6 content ($p = 0.098$), no in serum IL-6 level ($p = 0,322$). At the same time, higher amounts of both homogenate and serum IL-6 were registered in experimental groups compared to intact and control groups.
Conclusions. Inflammation plays a significant role in the pathogenesis of myocardial ischemic injury. Infarcted myocardium increases the production of IL-6. Increased IL-6 levels for a prolonged time can indicate associated inflammation and elevated risk of second myocardial infarction. Serum IL-6 level following AMI can be used for the inflammatory process monitoring. In order to prove it the research should be enlarged, and statistical correlations will be performed.
Key words: myocardial injury, cytokine, IL-6

LABORATORY OF TISSUE ENGINEERING AND CELL CULTURES

265. THE ETHYOLOGY OF THE AVASCULAR NECROSIS OF THE FEMORAL HEAD

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Introduction. Avascular necrosis (AVN) is the disease characterized by a vascular insult to the blood supply of the femoral head, which can lead to necrosis of the spongiform bone followed by

collapse of the femoral head with degenerative changes. It has been estimated that approximately 10 000 to 20 000 new cases are diagnosed in the USA each year and there are 300 000 – 600 000 people diagnosed with AVN.
Aim of the study. To elucidate the actual status in etiology of AVN of femoral head.
Material and methods. The following databases were used for articles search: Pubmed, Embrase, Hinary, Web of Science, Medline, Sciencedirect, for searching articles. We have selected and studied 74 articles containing the keywords: AVN of the femural head, etiology of AVN, genetic disorders in AVN.
Results. Traumatic aseptic necrosis of the femoral head appears as results of mechanical disruption of blood flow to the femoral head. The non-traumatic causes of secondary AVN of the femoral head are: chronic alcohol consumption (20–40%), corticosteroid therapy (35–40%), after organ transplant, haematologic disease (anemia, polycythemia, hemophilia, thalassemia), clotting diseases, connective tissue disease, infiltrating diseases; some endocrine diseases (Cushing disease, hyperparathyroidism), metabolic diseases (gout, hyperuricemia, high cholesterol), congenital diseases (congenital sprain hip joint, Legg–Calvé–Perthes disease), Caisson disease, pancreatitis, chronic renal failure, hemodialysis, chronic liver disease, HIV infection, pregnancy, chemo- and radio- therapy, thrombophlebitis. Approximately 10 to 20% of cases do not have any identifiable risk factors and are therefore considered to be idiopathic in nature. It has been shown that some genes are involved in the pathogenesis of AVN: ADH2, ADH3, ALDH2 and P450E1. These genes are involved in the alcohol metabolism and polymorphisms of these genes have been associated with the risk of AVN. Jones et al. found that approximately 82% of patients in their study had at least one coagulation factor abnormality. Familial forms of AVN of the femoral head appear to be very rare, with only a few families reported in the medical literature. Liu et all. noted that a COL2A1 gene mutation in certain families predisposed to development of AVN of the femoral head by autosomal dominant transmission.
Conclusions. 1. Avascular necrosis of the femoral head is especially common among young people, affecting mainly men. Often an underlying cause cannot be determined. 2. Aseptic necrosis of the femoral head is a disease whose etiology is not completely elucidated while the actual role of the genetic disorders in this pathology is to be determined.
Key words: avascular necrosys of the femural head, etiology of avascular necrosis, genetic disorders in avascular necrosis

266. THE THREE-DIMENSIONAL LIVER MATRIX FOR TISSUE ENGINEERING

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Introduction. According to The World Health Organization in 2012, about one-third of the world's population has serological evidence of hepatitis B infection (VHB). Terminal stage liver disease or hepatocellular carcinoma caused by VHB, leads to 0.5-1 million deaths per year. Worldwide viral hepatitis B is considered the 9th cause of death and represents 5-10% of all liver transplantation. That's why the phenomenon is perceived as significant global issues in public health. The growing of people number who need the liver transplant and the insufficiency of organ donors, as the advancement in bioengineering has enabled the development of new therapeutic strategies which involve generation of functional artificial organ, obtained by the decellularization technology and create extracellular matrix and their subsequent recellularisation.
Aim of the study. To obtain a liver matrix by decellularization and to maintain its vascular tree.