PCO_2 ($PetCO_2$) and breathing frequency were recorded and subjective symptoms evaluated. The subject who had $PetCO_2$ falling more than 5 mmHg from baseline and persisting at this low level for more than 15 seconds in the imagination was regarded as a hyperventilation responder. Parallel was registrated cardiac activity.

Results: In patients with medically unexplained dyspnea, imagination of fearful scenarios, induced anxious feelings, and provoked a significant fall in $PetCO_2$ ($P<0.05$). Breathing frequency tended to increase. 18 out of 28 patients were identified as hyperventilation responders compared to 8 out of 28 normal subjects without hyperventilation($P<0.01$). The patients reported symptoms of dyspnea, palpitation or rapid heart beat in the same fearful script imagery. Additionally, $PetCO_2$ fall was significantly correlated with the intensity of dyspnea and palpitation experienced during the mental imagery on one hand, and with anxiety symptoms on the other. Restful scenarios of images induced also hyperventilation but in comparison fearful scenarios of images they differ qualitative. Heart rate variability changed in case of hyperventilation in correlation with restful scenarios of images.

Conclusions: Fearful imagery provokes hyperventilation and induces subjective symptoms of dyspnea and palpitation in patients with medically unexplained dyspnea. Restful imagery provokes hyperventilation and induces changes in heart rate variability by increasing. The difference between the both hyperventilatory states is that in case of fearful imagery we observe tachypnoe and in case of restful imagery – hyperpnoe.

Key words: heart rate variability, hyperpnoe, fearful script imagery.

THE STEM CELLS IN CHRONIC EXPERIMENTAL LIVER DISEASES

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Introduction: Chronic liver diseases (CLD) are increasing worldwide affecting almost 17% of general population. In the Republic of Moldova during the last ten years the incidence and prevalence of CLD had increased continuously. The liver cirrhosis in our country is the third cause of death after cardiovascular diseases and cancer. This situation is the result of a high prevalence of infectious viral hepatitis, alcohol and hepatotoxic drug abuse, and the unavailable so far of the orthotopic liver transplantation (OLT), the only curative treatment for the end stage liver diseases. The number of patients waiting for an OLT has increased during the last years, meanwhile the organ donation has not kept up with demand. Consequently the organ shortage is increasing the morbidity and mortality of patients on waiting list. This clearly implies the need for finding alternative solutions for the patients with end stage liver disease, and stem cell therapy is the one that gives the most hope so far.

The aim of this study was to induce chronic experimental liver disease in rats, then transplant stem cells and further evaluate the effect on liver function.

Material and methods: Chronic liver lesions were induced on white female rats of 6-8 months age, weighting 210-250 mg, by injecting CCL4 subcutaneously, dissolved in olive oil, twice a week, for 8 weeks. At the end of 6 weeks the rats were divided into 5 groups with further intrasplenic transplantation of 6×10^3 allogenic stem cells (SC) performed. The animals in group 1 received blood marrow SC, the second group received umbilical cord SC, the third group received hepatic fetal SC. The fourth and fifth groups received intrasplenic saline solution only. Meanwhile we continue to inject CCL4 subcutaneously

twice a week for the groups 1,2,3 to prevent endogenous liver regeneration and allow the stem cells to act. For the fourth group we continue with CCL4 and for the 5 without CCL4 to allow endogenous regeneration for another 6 weeks. The animals were sacrificed at 10, 20 and 40 days after transplantation, and there were collected 5 ml of blood and the liver specimens.

Preventive results: After 6 weeks of CCL4 administration 90% of rats presented weight loss ranging between 5 to 20%, and signs of coagulopathy like periocular bleeding. The 6 rats sacrificed just before the SC transplantation proved the presence of ascites and yellow, nodular liver changes. Histological examination showed the presence of infiltration of the liver with neutrophils, regenerating nodules of hepatocytes and the deposition of connective tissue between these nodules.

Conclusions: Further biochemical, histological and immunohystochemical analyses have to be done on liver specimen and collected blood to evaluate the effects of SC therapy on the end stage of the liver disease.

Keywords: chronic liver disease, allogenic stem cells, intrasplenic transplantation.

DIFFUSE TOXIC GOITER WITH IRRITABLE BOWEL SYNDROME AND SERT GENE POLYMORPHISM

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Introduction: The irritable bowel syndrome (IBS) is a complex disorder that is associated with altered gastrointestinal motility, secretion, and sensation. Serotonin directly and indirectly affects intestinal motor and secretory function and abnormalities may lead to either constipation or diarrhea. The serotonin selective reuptake transporter (SERT), terminates the actions of serotonin by removing it from the interstitial space. Polymorphisms in the promoter region of the SERT gene have effects on transcriptional activity, resulting in altered serotonin reuptake efficiency.

The aim of this study was to assess the potential association between SERT polymorphism and type of intestine disorder in patients with diffuse toxic goiter and irritable bowel syndrome.

Material and methods: We have investigated 38 women with diffuse toxic goiter and irritable bowel syndrome. DNA of all subjects was analysed by polymerase chain reaction based technologies for SERT polymorphism. The patients were divided into 3 groups. The first group included 12 patients with diffuse toxic goiter combined with IBS with a predominance of diarrhea, second group - 12 patients with a predominance of constipation. Third group consisted of 14 persons with thyrotoxicosis without violation of the digestive system.

Results: In a first group of patients we have found all types of polymorphism: 67% homozygous LL alleles carriers gene SERT, 25% - SS-genotype, and only 1 patient (8%) was heterozygous carrier of LS-variant. Among persons of second group were 75% patients with LS-genotype, 25% had SS-variant. In the third group 79% patients had SS-genotype and 21% - LS-genotype.

Conclusion: These results confirm the association between SERT gene polymorphism and diffuse toxic goiter with IBS.

Key words: irritable bowel syndrome, serotonin, gene, diffuse toxic goiter.