UEG Week 2015 - Abstract Submission

Topic area: 8. LIVER

Topic: 8.3. Regeneration, stem cells and nutrition

UEG15-ABS-4747

TRANSPLANTATION OF HEMATOPOIETIC STEM CELLS CAN CHANGE THE INTENSITY OF LIVER CELLS' APOPTOSIS IN PATIENTS WITH ALCOHOLIC LIVER CIRRHOSIS

G. Burganova[*1], S. Abdulkhakov[1,2], A. Gumerova[1], I. Gazizov[1,2], M. Titova[1], A. Odintcova[3], A. Kiyasov[1]
[1]Institute of Fundamental Medicine and Biology, Kazan Federal University, [2]Human Anatomy Department, Kazan State Medical University, [3]Department of Gastroenterology, Republican Clinical Hospital, Kazan, Russian Federation

Has this abstract previously been presented?: No
Has this abstract been previously published?: No
Please select "Yes" in case your abstract should be considered as "Translational/Basic Science".: No
This abstract should be taken into consideration for the "Today's science; tomorrow's medicine" sessions.: No
Does the presenting author fulfil the criteria and want to apply for the travel grant?: Yes
Travel grant selection: Clinical Science travel grant
Contact E-mail Address: guzel.burganova@gmail.com

Introduction: Stem cell therapy is a promising technology for treating liver cirrhosis. Main source of these cells is bone marrow. The current method of aspiration of bone marrow under general anesthesia is inadvisable in patients with liver failure. Hematopoietic stem cells (HSCs) can be collected from blood stream with a non-invasive harvesting technique.
Aims & Methods: In this clinical trial we checked safety and efficacy of autologous HSCs from peripheral blood in patients with alcoholic liver cirrhosis and their influence to apoptosis intensity of liver cells. We examined liver biopsy specimens of 11 alcoholic cirrhosis patients (Child-Pugh class A and B). Biopsies were taken before the injection of autologous HSCs mobilized by granulocyte-colony-stimulating factor (G-CSF) into celiac trunk, 3 and 12 months after the procedure. Formalin-fixed, paraffin-embedded liver biopsy preparations were stained immunohistochemically with antibodies against Bcl-2, the anti-apoptotic protein.
Results: In the biopsies that were taken before the transplantation of HSCs we have seen many Bcl-2 positive cells in portal tracts. They were localized in liver parenchyma and in inflammatory infiltrates around the portal tracts. Positive cells could be divided into 3 types of cells: inflammatory cells with round or oval nucleus, cells with processes (sinusoidal cells) and single hepatocytes. We also observed weak expression of Bcl-2 in cholangiocytes. Three months after transplantation the number of positively stained cells significantly decreased. Nevertheless, twelve months after transplantation the amount of cells expressing anti-apoptotic protein grew up again, but didn't reach the level of first biopsies.
Conclusion: The analysis showed that the HSC treatment had no side effects. These results might indicate an intensification of inflammatory cells' apoptosis as a result of HSCs therapy. However, the effect of treatment remains only a few months and it is necessary to repeat the procedure.
I confirm having declared any potential Conflict of Interest for ALL authors listed on this abstract: Yes

Disclosure of Interest: None Declared

Keywords: apoptosis, hematopoietic stem cells, liver cirrhosis, transplantation