LIVER REGENERATION

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Key words: *liver, review, regeneration, stem cells, hepatocytes*

Background. Liver transplantation remains the only option for treating liver failure but is only available for a small number of patients. Alternative methods of treatment can expand the number of patients receiving effective treatment.

Aim. To study the features of the process of liver regeneration.

Material and Methods. The articles for the period from 2012 to 2017 were analyzed. The search was performed in the databases PubMed, Embase, Scopus. The words used are «liver regeneration», «stem cell–derived hepatocytes», «and engineered liver».

Results and Discussion. Tumor necrosis factor (TNFα), interleukin-6 (IL-6), hepatocyte growth factor (HGF) cause hepatocytes to pass from G0 to the S-phase of the cell cycle. Chronic liver damage causes a canal reaction in which liver progenitor cells (LPC) participate. Normally LPC show the ability of bipotential differentiation to both hepatocytes and cholangiocytes. Cell therapy by repopulation with transplanted hepatocytes is a safe and effective method, but only leads to a short-term partial correction of metabolic disorders, it is necessary to optimize engraftment and spreading. Liver diseases at the final stage are incompatible with cellular therapy due to the lack of a suitable environment for cell engraftment and repopulation. It is important to prove that the bioengineering liver is clinically safe, the network of the vasculature is not damaged to provide functional vascularization.

Conclusions. Replication of hepatocytes is dependent on the effect of growth factors and cytokines — TGF-α, HGF and IL-6, LPC can differentiate to both hepatocytes and cholangiocytes, the best solution is the use of induced pluripotent stem cells.

THE RESULT OF EARLY DIAGNOSIS OF CARPAL SYNDROME IN DENTISTS

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Key words: *carpal syndrome, dentistry, injection, local anesthesia*

Aim. To conduct an ultrasound diagnosis of carpal syndrome in dentists.

Material and Methods. The study involved 300 dentists aged 25–65 years, divided into 4 groups according to age: group 1 — 25–35; 2 — 36–45 years; 3 — 46–55 years; 4 — 56–65 years. All doctors underwent a diagnostic test of Falen, in which flexion (or extension) of the hand by 90 degrees results in numbness, tingling sensation or pain in less than 60 sec. A healthy person can also develop similar feelings, but not earlier than 1 minute later. The criterion for exclusion was the presence of diseases of the peripheral nervous system, trauma to the working hand.

Results and Discussion. Of the study showed a positive Falen test in seconds: 1st group for 73±0.9; in the 2nd group 69±0.5; in the 3rd group 64±0.4; in the 4th group 58±0.3. There was also a tendency to form a carpal syndrome in doctors who have reached the age of 50.

Conclusions. The results showed the direct dependence of the appearance of clinical symptoms of carpal syndrome of the canal by age, as well as the need for a more applied introduction to the educational process of the principles of ergonomics in dentistry.

ANATOMOMETRIC CHANGES OF THORAX AND SPINE AFTER PNEUMONECTOMY

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Key words: *pneumonectomy, thorax, spine, computed tomography, postoperative changes*

Aim. Identification of topographic-anatomical changes of thorax and spine after pneumonectomy

Material and Methods. An analysis of computed tomograms of 32 patients (29 men and 3 women aged 39 to 68 years) to pneumonectomy for lung cancer and 12 months after the operation was carried out. From 32 pneumonectomies 15 were performed on the right, 17 — on the left. The postoperative period passed without complications, leading of the post-pneumonectomy cavity was passive. The investigations were performed on a multispiral tomograph. On axial scans the retraction of the thoracic wall, anteroposterior and transverse dimensions of the thorax of the operated side were evaluated. In the mode of multiplanar reconstruction, the angle of inclination of lateral segments of the III and VII ribs was studied. The kyphotic and scoliotic deformation in the spinal were assessed by the Chaklin method. For statistical evaluation, Statistica 10.0 were used.

Results and Discussion. The obtained data showed that over one year after pneumonectomy