Research article

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ANGIOGENESIS IN ALCOHOLIC STEATOHEPATITIS, NONALCOHOLIC STEATOHEPATITIS AND HEPATITIS C VIRUS INFECTION (IMMUNOHISTOCHEMICAL STUDY)

The study was performed as the part of research work "Studying pathomorphological and pathogenetic features of diseases of thyroid gland, liver, cardiovascular and reproductive systems and hematological malignancies for improving their morphological diagnistics" (state registration number 0108U001134).

ABSTRACT. Background. Angiogenesis together with fibrogenesis and regeneration is an important mechanism of tissue reorganization in chronic liver diseases. Objective of the study is to examine morphologic signs of angiogenesis at the stage of cirrhotic transformation in alcoholic steatohepatitis, nonalcoholic steatohepatitis and hepatitis C virus infection. **Methods.** 45 autopsies with diagnosed alcoholic steatohepatitis, nonalcoholic steatohepatitis and viral hepatitis C were enrolled in this study. Diagnosis of alcoholic steatohepatitis was based on the data of alcohol abuse and morphologic signs of alcoholic disease – cardiomyopathy, chronic pancreatitis, alcoholic encephalopathy and typical liver changes. Viral genesis was proved by serological study (RNA HCV) and morphologic signs of HCV (METAVIR criteria). Diagnosis of nonalcoholic steatohepatitis was verified by the features of metabolic syndrome and hepatic changes (Brunt critera). The measures of angiogenesis employed were CD34-positive cells, evaluated in the liver tissue. Marker quantification was performed by assessing the ratio of stained tissue to the total area of the liver section using image analysis. "STATISTICA FOR WINDOWS 6.0" was used to analyze the data. Differences between groups were analyzed using ANOVA analysis (LSD test). $P < 0,05$ was considered significant. **Results.** General angiogenesis index was the highest in viral hepatitis and the lowest in nonalcoholic steatohepatitis ($p<0.05$). The same tendency was revealed for septal indexes: in viral hepatitis the meaning was three times higher than in steatohepatitis (difference between alcoholic and nonalcoholic steatohepatitis was not statistically significant). The highest lobular angiogenesis index was revealed in nonalcoholic steatohepatitis and the lowest in viral hepatitis ($p<0.05$). **Conclusion.** In hepatitis C virus infection CD34-positive cells are seen mostly in the septal compartment and in chronic steatohepatitis (alcoholic and nonalcoholic) – in lobular one. Such findings are in accordance with pathogenetic mechanisms of the diseases and may be used for differentiation diagnosis at the stage of cirrhotic transformation.

Key words: angiogenesis, alcoholic steatohepatitis, nonalcoholic steatohepatitis, hepatitis C virus infection.

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