



Original article

D2-40 Immunoreactivity of Lymphatic Vessels Endothelium and Representation of Lymphatic Vessels in the Liver of Human Fetuses of Different Gestational Age

Marko Jović¹, Ivan Nikolić¹, Vera Todorović², Aleksandar Petrović¹, Vladimir Petrović¹, Tijana Denčić³

¹University of Niš Faculty of Medicine, Department of Histology and Embryology, Niš, Serbia

²University of Business Academy Novi Sad, Faculty of Stomatology Pančevo, Department of Histology and Embryology, Serbia

³University of Nis Faculty of Medicine, Center for Pathology and Pathological Anatomy, Niš, Serbia

SUMMARY

In the reference literature, there are a few studies on the development of the lymphatic system in the liver, especially human. This study aims to establish the presence, time of appearance, distribution and representation of expression D2-40 molecule – a marker of lymph vessels endothelial cells during the fetal period of the human liver development.

The livers obtained from 20 human fetuses (10 male and 12 female), aged 12-37 gestational weeks, constituted our study material. Paraffin sections, 4 µm thick, were stained with hematoxylin and eosin for histological analysis, and with LSAB2/HRP method for immunohistochemistry using the D2-40 monoclonal antibody to mark lymphatic endothelial cells. The presence of lymphatic vessels was determined by morphometry, calculating their numerical and volume density.

The study showed that expression of D2-40 molecule was absent in the liver lymphatic vessels in the first trimester of development, while in the second trimester intensive D2-40 immunoreactivity was observed in the lymph vessels of the liver capsule, and low D2-40 immunopositivity of the lymph vessels in large portal spaces. In the third trimester, intensive D2-40 immunoreactivity was observed in the lymph vessels of the liver capsule and in the endothelium of numerous lymphatic vessels of various shape and size, located in the smaller and larger portal areas. Volume and numerical density of lymphatic vessels in the portal areas of the liver during fetal development increased from the second to the third trimester of pregnancy, which was proportional to the increase in volume density of the hepatic portal spaces. Based on the obtained results, a conclusion may be drawn that the lymph vessels in the liver can be identified in the first half of the second trimester, and their number was growing proportionally by the end of pregnancy.

Key words: D2-40 molecule, lymph vessels, liver, human fetus

Corresponding author:

Marko J

E-mail: marko.jovic@medfak.ni.ac.rs ović