

This bachelor thesis is a contribution to the research of structure of the placental capillaries. It deals with a quantitative comparison of pericytal coverage which encloses the endothelium of capillaries.

Samples were substracted from the placentas of 8 healthy mothers and from 18 placentas of mothers whose pregnancies were complicated by Type I diabetes mellitus. The marker of pericytes actin was demonstrated by immunohistochemistry on histological sections of formaline-fixed and paraffin-embedded specimens. Images of the placental terminal villi were obtained by confocal microscope and converted into TIFF data format. Measurements of the extent of pericytal coverage on the cross-section of a capillary were realized using ImageJ software. The obtained data were statistically analyzed and the conclusions were drawn from the results and revelation of a blind test. The test did not confirm the hypothesis that the diabetes mellitus type I affects the density of pericytal coverage of the capillary walls in the placenta.