

Patomorphological changes in placenta in women with early and late preeclampsia

21. Hypertensive Disorders in Pregnancy

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Objective

Preeclampsia is a leading reason of maternal death rate - 60,000 annually, and it complicates 5-8% of all pregnancies. Gestational endotheliopathy causing placental ischemia, hypoxia and oxydative stress, plays a leading role in the origine of preeclampsia. It's been proven for early onset of PE, for late PE it is more about maternal cardiovascular system.

Study design

Investigation includes 40 placentas from deliveries in women with preeclampsia (main group) and 40 placentas from physiological delivery in somatically healthy women, with uncomplicated pregnancy (control group). Placentas in the main group were divided into two sub-groups (20 in each) – with early and late preeclampsia. Specialties of the blood vessels in normal pregnancy were investigated, and their structural transformation with the developement of preeclampsia, according to the appearance of perinatal pathology. Morphometrical data of the blood stream was investigated with the help of eyepiece and program Image Tools 3,6.

Results

Significant decrease of weight ($p < 0,05$), square and volume of placenta was common to early preeclampsia, comparing to the same characteristics in late PE. Specific gravity of villi without vessels, hardened blood vessels, hardened villi and fibrinoid altered vessels were increased statistically significantly ($p < 0,05$) in placenta of women with early PE, comparing to women with late PE. The number of effective blood vessels crossings was determined mostly in late PE, comparing to the early form ($p < 0,05$). Found out significant differences ($p < 0,05$) in changes of architecture of placenta in early preeclampsia, according to the number of immature villi and villi with no signs of compensatory angiomatosis.

Conclusions

Increased number of hypoplasia of placenta, disorder of optimal placental blood stream and significant decrease of compensatory and adaptive changes in placenta are more common to early PE, comparing to late PE.