

Histological and Immunohistochemical Study on the Changes of Human Placental Tissue in Normal Pregnancy and Pr-eclampsia

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Abstract

Background: Preeclampsia is a serious disorder affecting the mother. It may be responsible for more than 50,000 maternal deaths worldwide each year. It is a major killer of both mother and fetus.

Aim: To demonstrate the morphological changes of human placental tissue in pre-eclamptic pregnancies compared with the normal by using histological and immunohistochemical techniques.

Materials & Methods: Twenty pregnant women were included in this study. 10 of them were diagnosed as having moderate pre-eclampsia and considered as the pre-eclamptic (PE) group, while 10 women were clinically normal and considered as the control group. Placental specimens were obtained after either vaginal delivery or caesarian section and processed for H&E and Masson's trichrome stains, as well as for immunohistochemical stains for eNOS and HIF-1 α . Morphometric measurement of number of syncytial knots, area % of collagen fibers, eNOS and HIF-1 α . were done followed by statistical analysis.

Results: PE group revealed thickened wall of fetal blood capillaries, crowded degenerating villi with decreased intervillous spaces, intravillous and perivillous fibrinoid deposition. Numerous syncytial knots and exfoliated trophoblast cells were also observed. There was thickened layer of subchorionic fibrinoid. Increased area% of collagen fibers, HIF-1 α . immunoreactivity and decreased area% of eNOS immunoeexpression were found.

Conclusions: As evidenced by the previous results, this study concluded various placental changes detected by histological and histochemical techniques. The findings have clarified a significant correlation between eNOS and HIF-1 α immunoeexpression and pre-eclampsia. Whether this relation is causal or effect relationship, this may need further investigations for better management and avoidance of consequences of pre-eclampsia.

Keywords: [pre-eclampsia](#), eNOS, [HIF-1 \$\alpha\$](#) , histological, immunohistochemical.

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