

# Oxidative damage to pre-eclamptic placenta: Immunohistochemical expression of VEGF, nitrotyrosine residues and von Willebrand factor

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**Objective:** To determine the relationship of biomarkers of placental damage by oxidative stress in pre-eclamptic placenta. **Methods:** A case-control study was performed on a population of 14 pregnant women with PE and 12 women with normal pregnancies. Immunohistochemical expressions of VEGF, vWF distribution, (Na + K)-ATPase activity, and abundance of nitrotyrosine residues, were assessed in the placental tissue. **Results:** Women with pre-eclampsia showed increased VEGF expression and abundance of nitrotyrosine residues in placental villous, and plasma vWF levels ( $p < 0.05$ ), whereas placental (Na + K)-ATPase activity were significantly reduced. The syncytiotrophoblast and the maternal space of pre-eclamptic placenta showed diminished and increased vWF expression, respectively, but no significant differences in its expression were found in the placental endothelium and stroma ( $p < 0.05$ ). **Conclusions:** It could be suggested that increased oxidative stress and VEGF contribute to enhance the imp