VEGF in the muscular layer of placental blood vessels: Immuno-expression in preeclampsia and intrauterine growth restrictrion and its association with the antioxidant status

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The pathophysiology of preeclampsia (PE), a disorder occurring in 5% of all pregnancies, remains largely unknown, but early placental hypoxia and oxidative stress are known to be involved in the mechanism of the syndrome. Maternal plasma and placental tissue samples were collected from PE, intrauterine growth restriction (IUGR), and normotensive pregnant patients. The immunohistochemical expression of vascular endothelial growth factor (VEGF), malondialdehyde (MDA) production and the activity of antioxidant enzymes (superoxide dismutase, catalase and glutathione peroxidase GSH-Px) were determined in the placental tissue. F2-isoprostane concentration and the ferric reducing ability of plasma (FRAP) were determined in maternal plasma. We found that the PE and IUGR groups showed a higher expression of VEGF in the muscular layer of fetal chorionic vessels. In addition, increased plasma F2 isoprostane levels and a significant reduction of FRAP in the plasma of PE women, as well as a lower a