ANTIOXIDANT ENZYME ACTIVITIES IN ERYTHROCYTES IN MATERNAL AND FETAL CIRCULATION IN PREECLAMPSIA

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Objective: Free radical induced lipid peroxidation has been suggested as a possible pathogenic factor of preeclampsia. It was aimed to measure antioxidant enzyme activity in erythrocytes in maternal and fetal circulation in preeclamptic patients in the third trimester.

Study design: Maternal and umblical venous blood were obtained from thirty preeclamptic and thirty-one normotensif women with singletton pregnancy in the third trimester. The activities of glutathione peroxidase (GSH-Px), catalase (CAT), and superoxide dismutase (SOD) were determined.

Results: Patients' ages and gestational weeks were not different in both groups ($p>0.05$). Whilst GSH-Px (U/gHb) and SOD (U/gHb) were significantly higher (1857±131,2 vs 1387±123,8 and 2593,2±330.7 vs 2041±200,3, $p<0.01$), CAT (K/gHb) was significantly lower (71,2±18.1 vs 137,3±27,1) in erythrocyte of patients with preeclampsia and of controls ($P<0.01$). In umblical erythrocytes, SOD was significantly higher (1818.5±151.5 vs 1535.8±169.2, $p<0.01$) respectively, whereas CAT and GSH-Px were not different (84.8±14.3 vs 97.1±31.8 and 1207.5±117.5 vs 1211.4±103.7, $p>0.05$). Independent t test was used for statistical significance. $p<0.05$ was set for significance.

Conclusion: These results demonstrate that increase in oxidative stress in preeclampsia results in development of defence mechanism both in maternal and fetal circulation to protect against reactive oxygen species. CAT has no impact on this protective effect in preeclampsia.