

NITRIC OXIDE CONCENTRATIONS ARE INCREASED IN FETAL CIRCULATION IN PREECLAMPSIA

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Objective: Nitric oxide (NO) is an important vasodilator, and the aim of this study was to measure serum concentrations of total nitrites, as an index of nitric oxide synthesis in the maternal and fetal circulation of normal pregnancies and in those complicated with preeclampsia.

Study Design: Umbilical and maternal venous blood were drawn from thirty preeclamptic and thirty-one normal pregnant women in the third trimester. Serum nitric oxide levels were determined with the greiss reaction by measuring combined oxidation products of nitric oxide, serum nitrite and nitrate after reduction with nitrate reductase. Independent t test was used for statistical significance. $p < 0.05$ was set for significance.

Results: Patients' ages and gestational weeks were not different in both groups ($p > 0.05$). There were significant difference in fetal serum nitric oxide levels between preeclamptic and control groups ($44.69 \pm 9.1 \mu\text{mol/L}$ vs $34.39 \pm 10.5 \mu\text{mol/L}$, $p < 0.01$) respectively. Whereas maternal serum levels of NO in both groups were not different ($46.9 \pm 8.8 \mu\text{mol/L}$ vs $41.2 \pm 14.6 \mu\text{mol/L}$, $p > 0.05$).

Conclusion: Total nitrites were significantly elevated in the fetal circulation in preeclampsia. These data suggest that maternal NO levels are not increased in preeclampsia. While this is not the case in fetal circulation, elevated fetal NO may be a compensatory response to improve blood flow indicating a different regulation process in fetal circulation during pregnancy in the third trimester.