

International Conference on Women's Health, Gynecology & Obstetrics

July 08-10, 2014 DoubleTree by Hilton Hotel Chicago-North Shore Conference Center, USA

Serum vascular endothelial growth factor and its receptor-1 in the prediction of preeclampsia

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Introduction: Preeclampsia is one of the leading causes of maternal and fetal morbidity and mortality worldwide. A multisystem disease which complicates 3-8% of pregnancies. It is characterized by hypertension and proteinuria after 20. weeks of gestation. It is believed that poor adaptation and decidual spiral arteries of intramio-metiran portion in preeclampsia leads to reduced utero-placental blood flow, leading to local placental hypoxia. Other studies indicates that in patients with preeclampsia there is increased levels of vascular endothelial growth factor (VEGF) and its soluble receptor-1 (sVEGF-1 or sFlt-1).

Aim of the study: Was to determine the significance of determining serum levels of VEGF and sFlt-1 in pregnant women in the first trimester of pregnancy with chronic hypertension (study group) compared to healthy pregnant women of the same gestational age (control group).

Methods: 70 pregnant women (from 11. to 14. weeks of gestation) were divided into: study group-measured patients with hypertension and a history of chronic hypertension or preeclampsia in previous pregnancies (No=30) and control group-healthy pregnant women (No=40). The level of VEGF and sFlt-1 in the serum was measured by ELISA.

Results: There were higher values sFlt-1 in the study (785 ng/mL) compared to controls (733 ng/mL), while the values of VEGF were lower in the control (122 ng/mL) compared to the study group (124 ng/mL).

Conclusion: Results of this research indicates in higher values of sFlt-1 and lower values of VEGF in study group than in control group may suggest the importance of further research of larger studies in order of early detection of endothelial dysfunction and prediction of preeclampsia. Therefore, there is a need for a multidisciplinary approach in searching for adequate diagnostic algorithm in early detection and timely therapy of preeclampsia, because each state to suppress anti-angiogenesis, if only for a short period of time, can be crucial in delivery disposal and increasing the rate of survival, both mother and child.

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