

EVALUATION OF MATERNAL PLACENTAL GROWTH FACTOR IN SUSPECTED PRE-ECLAMPTIC WOMEN

Mohamed Yousry Khamis, Mona Wagdy Ayad*, Manal Shafik Swelem, Gamal El Sayed Abdelmoamen Fares

Department of Obstetrics and Gynecology, Department of Clinical Pathology*, Alexandria Faculty of Medicine, Alexandria University

INTRODUCTION

Preeclampsia, one of the hypertensive disorders of pregnancy, is a disease of vascular endothelial dysfunction occurring after 20 weeks of gestation and can present as late as 4-6 weeks postpartum. It is clinically defined by gestational hypertension and proteinuria, with or without edema. Placental growth factor (PIGF) is a protein from the vascular endothelial growth factor (VEGF) family, which promotes angiogenesis, maintains fetal blood supply despite any maternal generalized vasoconstriction and is present in high concentration in the trophoblastic tissues. Any abnormal levels can be associated with placental insufficiency, therefore bad prognosis of preeclamptic disorders.

AIM OF THE WORK

- To assess serum level of maternal PIGF in pregnant women with high risk of developing preeclampsia and its role in prediction of secondary fetal and maternal outcomes.

SUBJECTS AND METHODS

The study was a case series randomized study conducted on 250 pregnant females with high risk of developing preeclampsia attending antenatal care clinic in El-Shatby maternity university hospital. Women were approached individually, after being consented to be included in the study, and they were asked for blood samples to assess serum level of placental growth factor.

RESULTS

In the present study, 19.6% of the included cases presented with serum PIGF value <12 pg/ml, 36.7% of cases presented with serum PIGF value ranged from 12 to 100 pg/ml and 44% of cases presented with serum PIGF value >100 pg/ml. There was no significant association between the values of serum PIGF and each risk factor of developing preeclampsia. There was no significant relation between serum PIGF levels and increase in blood pressure measurements during subsequent visits.

There was significant relation between abnormal values of serum PIGF and abnormal fetal doppler US findings, development of complications during pregnancy and early termination of pregnancy before 35 weeks of gestation as 22.1% of cases with serum PIGF values ≤ 100 pg/ml developed abnormal fetal doppler US findings, 13.6% of cases with serum PIGF ≤ 100 values pg/ml developed preeclamptic complications during pregnancy most commonly fetal distress detected by biophysical profile and 13.6% of cases with serum PIGF values ≤ 100 pg/ml needed termination of pregnancy < 35 weeks of gestation.

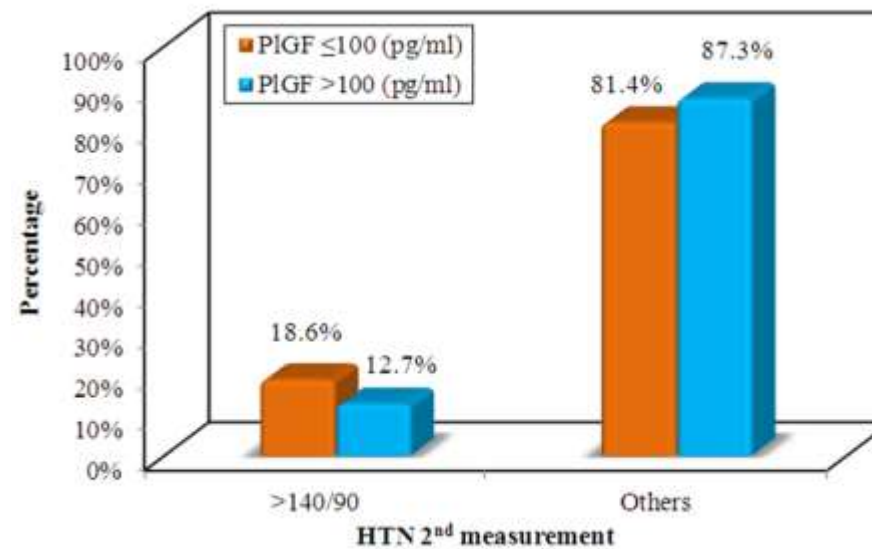


Figure 1:
Relation between abnormal serum PIGF and increase in blood pressure 2nd measurement

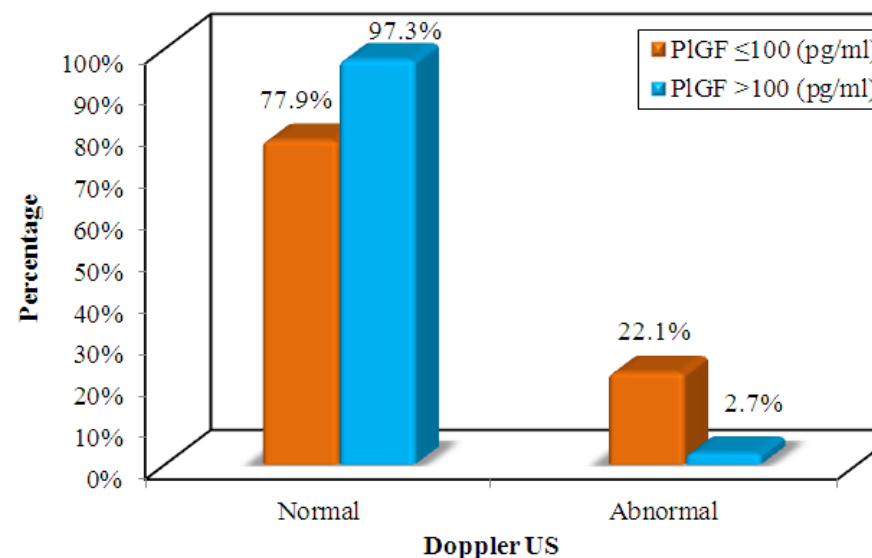


Figure (2):
Relation between abnormal PIGF with abnormal fetal doppler US

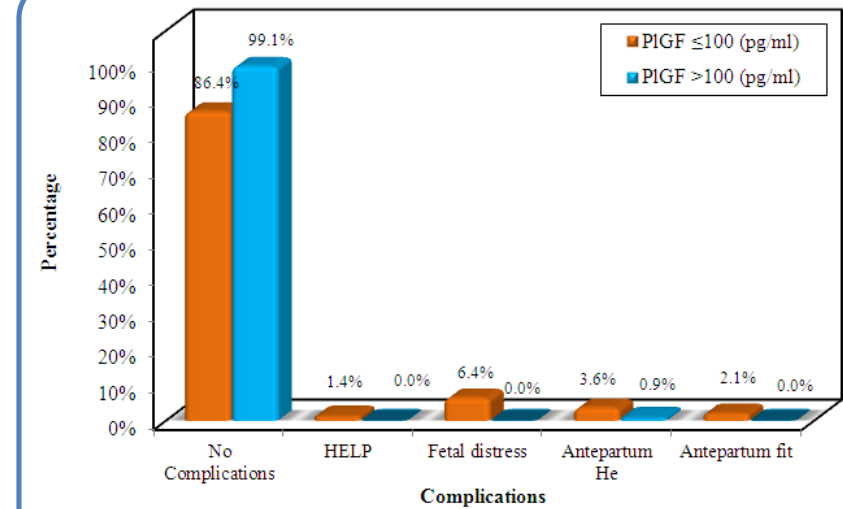


Figure 3:
Relation between abnormal serum PIGF with developing complications during pregnancy

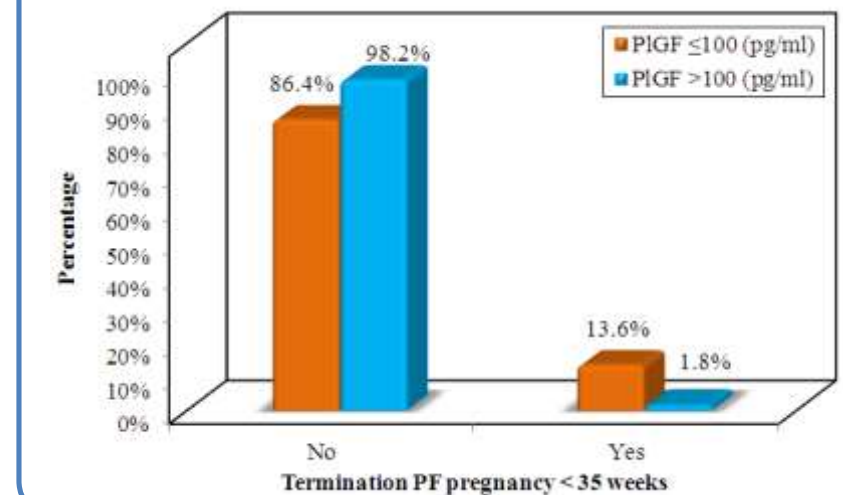


Figure 4:
Relation between abnormal serum PIGF with termination of pregnancy < 35 weeks

CONCLUSION

- Maternal serum placental growth factor (PIGF) level can be used as a prognostic marker for high risk preeclamptic women, independent of blood pressure, high and intermediate risk factors of developing preeclampsia. Abnormal maternal serum PIGF levels represent placental dysfunction and insufficiency and according to our study it can be used for screening as it is a good negative test.