PLACENTAL GROWTH FACTOR; EARLY PROGNOSTIC FACTOR OF PLACENTAL INSUFFICIENCY

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Objectives: Essential requirements for successful gestation include the coordinated growth and differentiation of the placenta and the development of a functional placental vasculature. However, relatively little have known factors for are responsible for regulating these functions. Angiogenic growth factor that might be involved in regulating both vascular endothelial cell and trophoblast function is placental growth factor (PLGF). PLGF is highly expressed in trophoblasts during normal pregnancy, and its expression has significantly decreased in obstetric complication presumed to be associated with placental bed hypoxia and ischemia. Accordingly, PLGF can regulate proliferation in first trimester trophoblast, apoptosis in term trophoblast, and it up regulated vascular growth, maturation and permeability.

Materials and methods:Clinico-functional evaluation of fetoplacental complex and definition of placental growth factor (PLGF) activity in serum of 126 pregnant women has been carried out. Current published reports have surveyed and our own work was review to highlight the expression, function and potential significance of PLGF at the human maternal-fetal interface. In a cross-sectional study, maternal serum samples were collect from 126 pregnant women. The pregnant women were subdivided into those with normal pregnancy (n=35), with placental insufficiency (n=44) and with placental insufficiency and infection (n=47). We measured PLGF levels in all samples using human PLGF immunoassay, R&D Systems, Inc.

Results: Serum PLGF levels at first were elevated in patients with placental insufficiency and then full down, which suggests that the growth factor has a role in the endothelial cell activation in the disease. Altered levels of PLGF implicated in the pathogenesis of placental dysfunction and PLGF mediates the endothelial cell activation that is involved in the pathogenesis of the clinical syndrome. The results indicated, that activity of PLGF characterizes initial changes in the fetoplacental complex and is early prognostic factor of possibility of duratatione placental insufficiency.

Conclusions: Many obstetrics complications are associated with aberrant trophoblast function and inadequate or dysfunctional vasculature within the developing placenta. The ability of PLGF to influence trophoblast and vascular endothelial cells provides clear impetus for further studies to investigate the biological and clinical significance of PLGF in normal and abnormal pregnancies.

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