

## Elevated serum $\beta$ -hCG levels in severe preeclampsia

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### **Abstract**

**Background:** Pregnancy induced hypertensive disorders are common complications responsible for fetal, neonatal and maternal morbidity. Current hypothesis regarding the pathophysiologic mechanisms of pregnancy induced hypertension point to early placental abnormalities.

**Objective:** To determine whether measurement of serum human chorionic gonadotropin might reflect a different secretory trophoblastic response of preeclampsia.

**Study design:** A prospective study.

**Setting:** Department of Obstetrics & Gynecology in Al-Kadimyia Teaching Hospital.

**Patients and methods:** A total of 80 pregnant women were studied during the period from October through July 2005. They included 40 patients with severe preeclampsia were matched with 40 healthy normotensive women in the third trimester with singleton pregnancies and without congenital malformations. Serum levels of  $\beta$ -hCG were measured by immunoenzymometric

assay before delivery and neonatal outcome was recorded.

**Results:** Serum  $\beta$ -hCG levels were found to be significantly higher in severe preeclamptic women compared with controls ( $P < 0.05$ ). Elevated  $\beta$ -hCG levels in severe preeclampsia was associated with higher rate of preterm delivery (50% vs. 7.5%), higher rate of intrauterine growth restriction of birth weight  $< 10^{\text{th}}$  centile (47.5% vs. 5%), higher rate of low birth weight of  $< 2500$  gm (70.25% vs. 12.5%) and higher rate of fetal death (7.5% vs. 0).

**Conclusion:** Elevated serum  $\beta$ -hCG levels in severely preeclamptic women reflect a significantly pathologic change and abnormal secretory function of the placenta with subsequent pregnancy outcome.

**Keywords:** preeclampsia, Human chorionic gonadotrophin, pregnancy

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### **Introduction**

Hypertensive disorders of pregnancy (HDP) are responsible for a significant amount of maternal and perinatal morbidity and mortality, they complicate about 7-10% of all pregnancies. Pregnancy induced hypertension (PIH) which includes preeclampsia-eclampsia is responsible for 70%, whereas chronic hypertension represents 30% of Hypertensive disorders in pregnancy<sup>(1)</sup>.

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The development of preeclampsia usually occurs after 20 weeks gestation and typically ends within 48 hours of the postpartum period<sup>(2)</sup>.

Preeclampsia is a disease defined by hypertension, proteinuria and oedema in pregnancy; or as gestational hypertension with proteinuria. It is most commonly occurs during the last trimester of pregnancy, when it arises in the early second trimester (14-20 weeks), a hydatidiform mole should be considered<sup>(3)</sup>.

It is primarily a disease of primigravida, being twice as common as multigravida and is specific to pregnancy and immediate puerperium<sup>(4)</sup>. Preeclampsia subdivided into mild and severe forms<sup>(5)</sup>, the differentiation between them can be