

HUMAN CHORIONIC GONADOTROPIN

CLINICAL USEFULNESS OF SERUM HCG MEASUREMENTS:

1. Assessment of pregnancy viability
 - Maternal serum beta-hCG 1st detectable 8-11 days after conception
 - Doubling time of beta-hCG varies with gestational age: 1.2 days shortly after implantation to 3.5 days at 8 wk LMP
 - If first beta-hCG < 5,000 and increases in 2 days < 53%, the pregnancy is not normal¹
 - Reaches maximum of 5,000-150,000 at 8-10 wks of gestation, then plateaus
2. Assessment of ultrasonography
 - Intrauterine gestational sac should be identified
 - By vaginal ultrasound if b-hCG >2000 mIU/ml
 - By abdominal ultrasound if b-hHCG >3600 mIU/ml
 - (if multiple gestation, gestational sac will not be apparent until higher titer)
 - Cardiac activity detectable at about 15,000-20,000
3. Further evaluation
 - Ectopic pregnancy if not increasing normally, or no intrauterine pregnancy on ultrasound with adequate hCG
 - Molar pregnancy or multiple gestation if high

Urine: hCG tests in clinic sensitive to 25 mIU/ml if urine SG > 1.012: those available in the store are usually sensitive to 50 mIU/ml (12-15 days from conception)

REFERENCE:

Bastian LA, Brown HL. Diagnosis and clinical manifestations of early pregnancy. Up to Date; accessed April 15, 2007.

¹ Barnhart KT, Sammel MD, Rinaudo PF *et al*, Symptomatic Patients With an Early Viable Intrauterine Pregnancy: hCG Curves Redefined. *Obstet & Gyn* 2004;104:-55