Figure 1. Evaluation of first trimester bleeding

Bleeding in desired pregnancy, < 12 weeks gestation

Physical exam

- Peritoneal signs or hemodynamic instability
  - Transfer to ED

- Non-obstetric cause of bleeding identified
  - Diagnose and treat as indicated

- Products of conception (POC) visible on exam
  - Incomplete abortion, treat as indicated

- Patient stable, no POC or other causes of bleeding
  - Transvaginal ultrasound (TVUS) and and β-hCG level
    - Ectopic or signs suggestive of ectopic pregnancy
      - Presume ectopic; refer for high-level TVUS and/or treatment
    - Viable intrauterine pregnancy (IUP)
      - Threatened abortion; repeat TVUS if further bleeding
    - Nonviable IUP
      - Embryonic demise, anembryonic gestation or retained POC; discuss treatment options
    - IUP, viability uncertain
      - Repeat TVUS in one week and/or follow serial β-hCG's
    - No IUP, no ectopic seen
      - IUP seen on prior TVUS
        - Completed abortion; expectant management
      - No
        - See Figure 2

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No intrauterine (IUP) or ectopic pregnancy seen on transvaginal ultrasound (TVUS)

IUP seen on prior TVUS?

Yes

Completed abortion; expectant management

No

Ectopic precautions, Repeat hCG in 48 hours

hCG > 1500 – 3000*

Serial hCGs rising and > 1500 – 3000*

Single hCG > 1500 – 3000* and bleeding history not consistent with having passed POC

Single hCG > 1500 – 3000* and bleeding history consistent with having passed POC

Obtain high-level TVUS & serial hCGs to differentiate between ectopic, early IUP, and retained POC; treat as indicated

Repeat hCG fell < 50% or rose

Repeat hCG fell ≥ 50%

Ectopic precautions, Repeat hCG in 48 hrs

Repeat hCG fell > 50%

Suggests resolving PUL; ectopic precautions, follow hCG weekly to < 5mIU/mL**

Repeat hCG < 1500 – 3000*

Repeat hCG ≤ 50% or rose ≤ 53%***

Repeat TVUS to evaluate for IUP

Repeat hCG > 1500 – 3000*

Repeat hCG rose > 53%***

Suggests viable pregnancy but does not exclude ectopic; Follow hCG until > 1500 – 3000*, then TVUS for definitive diagnosis

hCG < 1500 – 3000*

Repeat hCG > 1500 – 3000*

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Repeat hCG ≤ 50% or rose ≤ 53%***

Repeat TVUS to evaluate for IUP

Repeat hCG > 1500 – 3000*

Repeat hCG rose > 53%***

Suggests viable pregnancy but does not exclude ectopic; Follow hCG until > 1500 – 3000*, then TVUS for definitive diagnosis

* the β-HcG level at which an intrauterine pregnancy should be seen on transvaginal ultrasound is referred to as the discriminatory zone and varies between 1500-3000 mIU depending on the machine, the sonographer, and number of gestations.

** β-HcG needs to be followed to zero only if ectopic pregnancy has not been reliably excluded. If a definitive diagnosis of completed miscarriage has been made, there is no need to follow further β-hCG levels.

*** In a viable intrauterine pregnancy, there is a 99% chance that the β-hCG will rise by at least 53% in 48 hours. In ectopic pregnancy, there is a 21% chance that the β-hCG will rise by 53% in 48 hours. Approximately 1/3 of patients have a rise or fall of β-hCG that is within the normal limits of a viable intrauterine pregnancy or completed early pregnancy loss. Always use clinical judgment in combination with β-hCG values.