

## Evaluation and Management of First-Trimester Miscarriages: Review Questions

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### QUESTIONS

Choose the single best answer for each question.

- 1. Recurrent first-trimester miscarriages may be caused by autoimmune disease. Which of the following antibody tests is most important to order in a patient with recurrent early miscarriages?**
  - A) Antinuclear antibody (ANA)
  - B) Systemic lupus erythematosus (SLE) antibody
  - C) Antisperm antibodies
  - D) Histocompatibility locus antigens
  - E) Anticardiolipin antibodies
- 2. All of the following tests should be ordered in the work-up of a patient with recurrent first-trimester miscarriages EXCEPT:**
  - A) Hysterosalpingogram
  - B) Serum prolactin
  - C) Serum thyroid-stimulating hormone (TSH)
  - D) Glucose-tolerance test
  - E) Lupus anticoagulant
- 3. Approximately 10% to 15% of women with recurrent first-trimester miscarriages have congenital uterine anomalies. Which of the following anomalies is most commonly associated with first-trimester miscarriages?**
  - A) Unicornuate uterus
  - B) Bicornuate uterus
  - C) Septate uterus
  - D) Didelphic uterus
  - E) Arcuate uterus
- 4. Which of the following uterine anomalies, when surgically corrected, has the best outcome for future term pregnancies?**
  - A) Arcuate uterus
  - B) Unicornuate uterus
  - C) Bicornuate uterus
  - D) Didelphic uterus
  - E) Septate uterus
- 5. All of the following statements about first-trimester miscarriage are true EXCEPT:**
  - A) Approximately 50% to 70% of fertilized eggs result in spontaneous miscarriage.
  - B) Approximately 15% to 20% of all clinically diagnosed pregnancies result in recognized spontaneous miscarriage.
  - C) Chromosomal anomalies account for 50% to 60% of spontaneous miscarriages in the first trimester.
  - D) Polyploidy is the most common chromosomal anomaly seen in fetal tissue karyotypes analyzed in early pregnancy loss.
  - E) Approximately 90% of pregnancies progress to term when fetal heart motion is evident on sonography.

*(turn page for answers)*

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**EXPLANATION OF ANSWERS**

1. **(E) Anticardiolipin antibodies.** ANA is the antibody usually measured to diagnose SLE. ANA and histocompatibility locus antigens are no longer routinely ordered in the work-up of recurrent early miscarriages because they have not been proven to be responsible for recurrent pregnancy loss. Based on studies of mice, Menge suggested that antisperm antibodies cross-react with cleaving embryos, resulting in spontaneous miscarriages. However, this theory has not been proven in humans; thus, antisperm antibodies testing is not included in an evaluation for recurrent miscarriages. Anticardiolipin is one of two antiphospholipid antibodies associated with first-trimester miscarriage. Therefore, anticardiolipin antibody testing is a mandatory part of any work-up for patients with recurrent early miscarriages.
2. **(D) Glucose-tolerance test.** A hysterosalpingogram is required for patients who have recurrent first-trimester miscarriages because uterine anomalies, especially a septate uterus, must be ruled out. Serum prolactin levels must be measured because hyperprolactinemia causes a luteal-phase defect characterized by low progesterone, and progesterone deficiency can cause early pregnancy loss. TSH levels must be included in the work-up because hypothyroidism may be the cause of the early pregnancy losses. Also, hypothyroidism may be associated with high thyrotropin-releasing hormone, which is a prolactin-stimulating factor that results in hyperprolactinemia. Lupus anticoagulant is the second antiphospholipid antibody that may be responsible for early pregnancy loss. No studies implicate subclinical or adequately controlled diabetes mellitus as a cause of recurrent miscarriage. Therefore, a routine glucose-tolerance test is not indicated for patients with recurrent first-trimester miscarriages.
3. **(C) Septate uterus.** An arcuate uterus is not associated with first-trimester miscarriages. A unicornuate, bicornuate, or didelphic uterus is usually associated with second- or third-trimester miscarriages; early pregnancy miscarriages are rarely noted in patients with these congenital uterine anomalies. In the septate uterus, the septum is often the site of implantation and subsequently early pregnancy loss may occur. Poor blood supply to the septum (where nidation occurs) may cause recurrent miscarriages.
4. **(E) Septate uterus.** An arcuate uterus is usually not treated because it is usually not associated with early or late miscarriages. A unicornuate or didelphic uterus cannot be corrected surgically except when indicated that they may need cervical cerclage. A bicornuate uterus may be associated with recurrent second- or third-trimester miscarriage. In these cases, laparotomy for uterine repair is indicated. Strassman metroplasty is the surgical procedure of choice. Approximately 50% of patients who undergo this procedure subsequently carry pregnancy to term. In a patient with a septate uterus, the septum can be easily excised through hysteroscopy. Approximately 85% of patients who have recurrent early pregnancy loss and undergo surgical correction of a septate uterus deliver viable infants in their next pregnancy.
5. **(D) Polyploidy is the most common chromosomal anomaly seen in fetal tissue karyotypes analyzed in early pregnancy loss (FALSE).** Approximately 50% to 70% of fertilized ova end in spontaneous miscarriage. Most of these miscarriages are unrecognized because they occur before or at the time of the next expected menses. Clinically recognized spontaneous miscarriages are estimated to occur in 15% to 20% of all clinically diagnosed pregnancies. Between 50% and 60% of first-trimester spontaneous abortions show evidence of genetic defects; the most common defect is trisomy (46%), followed by x-monosomy (23%), and polyploidy (19%). Approximately 90% of pregnancies progress to term when fetal heart motion is evident on sonography.

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