Rhesus Alloimmunization: Review Questions

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QUESTIONS

Choose the single best answer for each question.

Questions 1–3 refer to the following case.

A 24-year-old gravida 2 para 1 woman is rhesus (Rh) negative. At 16 weeks of gestation, results of an indirect Coombs test are 1:8. At her next prenatal visit at 21 weeks of gestation, her antibody titer level rises to 1:64. Her past medical and surgical history are unremarkable. She has no known drug allergies. The patient’s past obstetric history is remarkable for a normal spontaneous vaginal delivery 3 years prior to the current pregnancy. She states that she had no problems in her previous pregnancy that she can remember. Her prenatal history for this pregnancy has been uneventful.

1. Which of the following are options for the next step in the management of this patient’s pregnancy?
   (A) Amniocentesis or fetal echocardiogram
   (B) Amniocentesis or middle cerebral artery (MCA) Doppler assessment
   (C) Chorionic villi sampling or amniocentesis
   (D) MCA Doppler assessment or fetal echocardiogram
   (E) Chorionic villi sampling or MCA Doppler assessment

2. What is the rate of miscarriage following amniocentesis in this setting?
   (A) 1/10 procedures
   (B) 1/100 procedures
   (C) 1/250 procedures
   (D) 1/2500 procedures

3. The case patient is now at 28 weeks’ gestation, and it is determined that the fetus has severe anemia. Which of the following is the next step in this patient’s management?
   (A) Amniocentesis
   (B) Cesarean delivery
   (C) Expectant management
   (D) Intrauterine transfusion
   (E) MCA Doppler assessment

4. All of the following are findings of fetal hydrops on obstetric ultrasound EXCEPT:
   (A) Scalp edema
   (B) Ascites
   (C) Pericardial effusion
   (D) Enlarged fetal bladder
   (E) Pleural effusion

(turn page for answers)

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ANSWERS AND EXPLANATIONS

1. (B) Amniocentesis or MCA Doppler. Amniocentesis is used to detect bilirubin levels in the amniotic fluid. These values can be plotted on a Queenan graph to determine further management options. Generally, once an amniocentesis is performed, it may need to be repeated several times throughout the pregnancy to monitor bilirubin levels, depending on gestational age and fetal status as seen on obstetric ultrasound examinations. MCA Doppler waveform analysis incorporates ultrasound without the risk of invasive procedures and can be used to predict fetal anemia as well. Neither fetal echocardiogram nor chorionic villi sampling are useful in management of Rh alloimmunization.

2. (C) 1/250 miscarriage rate. The overall risk of miscarriage following a single amniocentesis procedure is approximately 1/200 to 1/250 in this patient. The risk of a chorionic villus sampling procedure (which has no relevance in this particular case) is approximately 1/100. The other ratios have no meaning.

3. (D) Intrauterine transfusion. Severe anemia is associated with fetal death. One option for management when the fetus is in danger of intrauterine death (detected by Doppler examination or by using Queenen graphs) is intrauterine fetal transfusion. There are 2 methods: intraperitoneal and intravascular. The intravascular intrauterine transfusion method has a higher success rate in the management for Rh alloimmunization, but there are risks involved. In addition, preterm premature rupture of membranes, preterm labor, and chorioamnionitis are some of the complications associated with an intrauterine transfusion.

4. (D) Enlarged fetal bladder. Enlarged fetal bladder is not a finding of fetal hydrops on obstetric ultrasound. Ultrasound plays a pivotal role in the management of Rh alloimmunization. All of the choices are signs of significant disease. Scalp edema, abdominal ascites, and pericardial and pleural effusion are ominous signs for a fetus affected by Rh alloimmunization.

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