

# Intrauterine Growth Restriction

Topic- based Uworld Questions

Block 1, 2, 7, 8



A 19-year-old woman comes to the office due to vaginal bleeding and cramping that started 2 hours ago. The patient has no nausea, vomiting, fever, chills, or abnormal discharge. Her last menstrual period was 10 weeks ago. She has no chronic medical conditions and takes no medications. The patient does not drink alcohol but smokes a pack of cigarettes daily and uses illicit drugs on occasion. Temperature is 36.7 C (98 F), blood pressure is 120/70 mm Hg, and pulse is 76/min. BMI is 23 kg/m<sup>2</sup>. On physical examination, the abdomen is soft and nontender. Pelvic examination reveals a 10-week-size, nontender uterus; a closed cervix; and a small amount of bright red blood in the vaginal vault. A urine pregnancy test is positive. A urine drug screen is positive for amphetamines. Ultrasound confirms a 10-week intrauterine gestation with a normal fetal heartbeat. This patient is at risk for which of the following pregnancy complications?

- A. Brachial plexus injury
- B. Cervical insufficiency
- C. Fetal growth restriction
- D. Gastroschisis
- E. Malpresentation
- F. Neural tube defect
- G. Polyhydramnios
- H. Vasa previa

**Submit**

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- A. Brachial plexus injury (0%)
- B. Cervical insufficiency (1%)
- C. Fetal growth restriction (86%)
- D. Gastroschisis (1%)
- E. Malpresentation (0%)
- F. Neural tube defect (4%)
- G. Polyhydramnios (0%)
- H. Vasa previa (3%)

Omitted

Correct answer

C



86%

Answered correctly



02 secs

Time Spent



05/28/2020

Last Updated

Illicit drug abuse in pregnancy	
<b>Risk factors</b>	<ul style="list-style-type: none"> <li>• Adolescent pregnancy</li> <li>• Late/noncompliant prenatal care</li> <li>• Inadequate pregnancy weight gain</li> </ul>
<b>Obstetric complications</b>	<ul style="list-style-type: none"> <li>• Spontaneous abortion</li> <li>• Preterm birth</li> <li>• Preeclampsia</li> <li>• Abruption placenta</li> <li>• Fetal growth restriction</li> <li>• Intrauterine fetal demise</li> </ul>

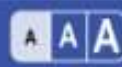
This patient has vaginal bleeding, a closed cervix, and a viable fetus on ultrasound, a presentation consistent with a **threatened abortion**; spontaneous abortion is a complication of **amphetamine abuse**. Although amphetamines cross the placenta, they are not linked to congenital structural abnormalities. Amphetamine use during pregnancy is associated with **fetal growth restriction**, preeclampsia, abruption placenta, preterm delivery, **intrauterine fetal demise**, and an increased risk of maternal mortality.

Illicit drug use during pregnancy is common and is associated with adolescent pregnancy, late initiation of prenatal care, noncompliance, and poor pregnancy weight gain. Because illicit drug use in pregnancy is associated with an increased risk of obstetric complications and long-term complications in offspring (eg, cognitive delay), **all patients should be screened** for illicit drug use at the initial prenatal visit. Patients with positive screening should be followed with serial urine drug tests and counseled regarding options for managing cessation.

**(Choice A)** Brachial plexus injury is a complication associated with shoulder dystocia, typically the result of fetal macrosomia. Amphetamine use is associated with fetal growth restriction, making a brachial plexus injury less likely.

**(Choice B)** Cervical insufficiency is painless second-trimester cervical dilation resulting in pregnancy loss. Risk factors include cervical surgery (eg, conization) and congenital abnormalities (eg, in utero diethylstilbestrol exposure). Threatened abortion is not associated with cervical





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**(Choice B)** Cervical insufficiency is painless second-trimester cervical dilation resulting in pregnancy loss. Risk factors include cervical surgery (eg, conization) and congenital abnormalities (eg, in utero diethylstilbestrol exposure). Threatened abortion is not associated with cervical insufficiency.

**(Choices D and F)** Gastroschisis is associated with first-trimester use of nonsteroidal anti-inflammatory drugs. Neural tube defects are associated with folic acid deficiency. Amphetamines do not increase the risk for either of these structural defects.

**(Choice E)** Risk factors for malpresentation (eg, breech, transverse lie) include uterine fibroids, placenta previa, prematurity, and multiple gestation, not amphetamine use.

**(Choice G)** Polyhydramnios is associated with poorly controlled maternal diabetes mellitus and fetal anomalies that interfere with swallowing (eg, esophageal atresia). Amphetamines do not increase the risk of fetal anomalies or diabetes mellitus.

**(Choice H)** [Vasa previa](#) is associated with a low-lying placenta or multiple gestation. Neither amphetamine abuse nor threatened abortion is a risk factor for vasa previa.

#### Educational objective:

Amphetamine abuse during pregnancy is associated with preterm delivery, preeclampsia, abruptio placentae, fetal growth restriction, and intrauterine fetal demise.

#### References

- [Methamphetamines and pregnancy outcomes.](#)
- [Amphetamines, the pregnant woman, and her children: a review.](#)

A 39-year-old woman, gravida 1 para 0, at 34 weeks gestation comes to the office for a routine prenatal visit. She has good fetal movement and some lower abdominal pressure. Other than a cough and nasal congestion during the first trimester, the patient has had an uneventful pregnancy. Her first trimester screening and fetal anatomy ultrasound were both normal. She was diagnosed with hypertension 5 years ago for which she takes labetalol. The patient drinks 2 cups of coffee daily but does not use tobacco, alcohol, or illicit drugs. She is a nurse in the neonatal intensive care unit and plans to work until her due date. Blood pressure is 142/82 mm Hg and fundal height is 30 cm. Ultrasound reveals a biparietal diameter consistent with 32 weeks and abdominal circumference consistent with 27 weeks gestation. A normal amount of amniotic fluid and a posterior placenta are present. Estimated fetal weight is at the 8th percentile for gestational age. Which of the following is the most likely cause of this fetus' condition?

- A. Advanced maternal age
- B. Caffeine consumption
- C. Congenital infection
- D. Hypertension
- E. Trisomy 21

**Submit**



Previous



Next



Full Screen



Tutorial



Lab Values



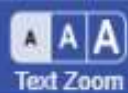
Notes



Calculator



Reverse Color



Text Zoom

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- A. Advanced maternal age (13%)
- B. Caffeine consumption (7%)
- C. Congenital infection (14%)
- D. Hypertension (61%)
- E. Trisomy 21 (3%)

Omitted

Correct answer  
D

61%

Answered correctly



01 sec

Time Spent



05/04/2020

Last Updated

Explanation

Fetal growth restriction



Fetal growth restriction		
	Symmetric	Asymmetric
<b>Definition</b>	<ul style="list-style-type: none"> <li>• Ultrasound estimated fetal weight &lt;10th percentile for gestational age</li> </ul>	
<b>Onset</b>	<ul style="list-style-type: none"> <li>• 1st trimester</li> </ul>	<ul style="list-style-type: none"> <li>• 2nd/3rd trimester</li> </ul>
<b>Etiology</b>	<ul style="list-style-type: none"> <li>• Chromosomal abnormalities</li> <li>• Congenital infection</li> </ul>	<ul style="list-style-type: none"> <li>• Utero-placental insufficiency</li> <li>• Maternal malnutrition</li> </ul>
<b>Clinical features</b>	<ul style="list-style-type: none"> <li>• Global growth lag</li> </ul>	<ul style="list-style-type: none"> <li>• "Head-sparing" growth lag</li> </ul>
<b>Management</b>	<ul style="list-style-type: none"> <li>• Weekly biophysical profiles</li> <li>• Serial umbilical artery Doppler sonography</li> <li>• Serial growth ultrasounds</li> </ul>	

**Fetal growth restriction (FGR)** is defined as an estimated fetal **weight <10th percentile** for gestational age. Fetuses with growth restriction have increased risk of intrauterine demise and neonatal morbidity/mortality (eg, preterm delivery).

FGR can be characterized as symmetric or **asymmetric**. Congenital disorders or insults during the first trimester (eg, aneuploidy, infections) are the most common causes of symmetric FGR (eg, the entire fetus is affected). Asymmetric FGR, the result of placental dysfunction during the **second and/or third trimester**, is associated with conditions that cause **placental insufficiency** (eg, hypertension, pregestational diabetes). In normal fetal development, the fetal abdomen grows exponentially during the second and third trimester. Insults (eg, hypoxemia) at this stage of pregnancy cause fetal blood flow to be redistributed to the vital organs (eg, brain) and away from the abdomen, resulting in an asymmetric, or **"head-sparing," growth** pattern.

In this patient, the fetal head is 2 weeks smaller and the abdomen is 7 weeks smaller than expected for gestational age, indicating asymmetric FGR. The patient's **hypertension** is the most likely cause. Even when well controlled, hypertension can cause underdevelopment of the spiral arteries in the placenta, resulting in increased vascular resistance. These vascular alterations can cause placental insufficiency and



- Serial growth ultrasounds

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**(Choice A)** Advanced maternal age ( $\geq 35$ ) is associated with an increased risk for fetal chromosomal abnormalities and maternal comorbidities (eg, diabetes, hypertension); it is not an independent risk factor for FGR.

**(Choice B)** Cocaine, tobacco, and alcohol use is associated with FGR, but caffeine use is not.

**(Choice C)** First trimester congenital infection (eg, malaria, toxoplasmosis, syphilis, cytomegalovirus, rubella, varicella) results in symmetric FGR.

**(Choice E)** This patient had a negative first trimester aneuploidy screening and a normal anatomy ultrasound, making trisomy 21 unlikely.

#### Educational objective:

Asymmetric fetal growth restriction (FGR) is due to second and third trimester placental insufficiency (eg, hypertension) that results in a restriction of abdominal growth that is more pronounced than the restriction in head growth. Symmetric FGR is due to congenital disorders or first trimester infections.

#### References