

UNIT 2: OBSTETRICS

SECTION A: NORMAL OBSTETRICS

Educational Topic 9: Preconception Care

Rationale: The proven benefits of good health prior to conception include a significant reduction in maternal and fetal morbidity and mortality.

Intended Learning Outcomes:

A student should be able to:

- Describe how certain medical conditions affect pregnancy
- Describe how pregnancy affects certain medical conditions
- Assess a patient's genetic risk as well as father's genetic risk with regard to pregnancy
- Describe genetic screening options in pregnancy
- Recognize a patient's risk of substance abuse and intimate partner violence and explain how this would be addressed with a patient
- Appraise a patient's nutritional status and make recommendations to the patient on nutrition and exercise
- Assess a patient's medications, immunizations and environmental hazards in pregnancy
- Identify appropriate folic acid intake
- Identify ethical issues associated with prenatal genetic screening and diagnostic tests

TEACHING CASE

CASE: You have been Mary's doctor for the past 3 years. She is a 39-year-old Caucasian woman with a BMI of 32.9 who sees you primarily for her idiopathic chronic hypertension, which is well controlled on an ACE inhibitor. She has smoked 1 pack of cigarettes per day for the past 20 years. She is in today for her annual exam and mentions that she is getting married in a few months and would like to start a family. She has never been pregnant before.

On physical exam, her BP=138/84, Ht=5' 2", Wt=180 lbs. Otherwise, her exam is unremarkable.

COMPETENCY-BASED DISCUSSION & KEY TEACHING POINTS:

Competencies addressed:

- Patient care
- Medical knowledge
- Interpersonal and communication skills
- Professionalism

1. What is the goal of counseling a woman about pregnancy prior to conception?

- This type of counseling is often referred to as preconception care or counseling. The goal is to optimize, whenever possible, a woman's health and knowledge *before* planning and conceiving a pregnancy in order to eliminate, or at least reduce, the risk associated with pregnancy for the woman and her future baby. In addition, if pregnancy is not desired, then current contraceptive use and options can be discussed to assist the patient in identifying the most appropriate method for her and to reduce the potential for an unplanned pregnancy.

2. What are the major topics that should be discussed or addressed with any woman prior to conception?

- Identify undiagnosed, untreated or poorly controlled medical conditions
- Review immunization history and recommend appropriate immunizations
- Risks of medication and radiation exposure in early pregnancy
- Nutritional issues
- Family history and genetic history including racial/ethnic background and specific genetic risks
- Tobacco, alcohol, and substance abuse and other high-risk behaviors (such as sexual activity and risk for STIs)
- Occupational and environmental exposures
- Social issues
- Mental health issues
- Screening for intimate partner violence issues

A provider who is skilled in the care of obstetric patients may perform counseling. However, the assistance of a maternal-fetal medicine specialist or genetic specialist may be necessary in certain circumstances.

3. For the patient in this case, what specific topics need to be addressed?

- Mary will need to be counseled regarding several preconception issues, including:
 - Weight loss and exercise:
 - Mary's BMI is 32.9 and she is obese [BMI ≥ 30]; weight loss in obese non-pregnant women has proven health benefits: for Mary, she may see improvement in her blood pressure and decrease the need for antihypertensive therapy; obesity in pregnancy is associated with increased risks including higher rates of gestational diabetes, preeclampsia, cesarean delivery, anesthesia complications, post-operative complications)
 - The effect of chronic medical disease (idiopathic hypertension) on pregnancy (increased risk of preeclampsia, fetal growth restriction, abruption and recommendations for heightened maternal and fetal surveillance in pregnancy)
 - Need to modify antihypertensive therapy. ACE inhibitors are contraindicated in pregnancy due to risks for fetal renal dysgenesis and dysfunction
 - Effect of smoking on pregnancy (increased risk of fetal growth restriction)

- Offer Cystic Fibrosis (CF) carrier testing (carrier prevalence increased in Caucasians) and discuss any family history of birth defects or genetic disorders: referral for genetic counseling may be warranted if issues are identified
- Discussion of increased risk of Down's Syndrome and other trisomies based on current age of 39 and probable older age when she conceives. Screening options may include cell free fetal DNA, nuchal translucency and first trimester screening, quadruple screen and integrated/sequential techniques
- Begin prenatal multivitamins or at least folic acid supplementation (0.4 mg per day) for the prevention of fetal neural tube defects and 4 mg/day if they have had a prior child/pregnancy with a neural tube defect
- Accurate recording of LMP and cycle length in order to assist in dating her pregnancy and allow her to present early for prenatal care when she does conceive.
- Review immunization history; employment, medical or behavioral risk factors for infections against which effective vaccines are available; and test for evidence of immunity against rubella: recommend immunizations based on your review

REFERENCES

Beckman CRB, et al. Obstetrics and Gynecology. 7th ed. Philadelphia: Lippincott, Williams & Wilkins, 2013.

Hacker NF, Moore JG, et al. Essentials of Obstetrics and Gynecology. 5th ed. Philadelphia: Saunders, 2010.