

MD News Article

Preconception Counseling: Chance Favors the Prepared Mind

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Prior to conception, any patient desiring fertility has an opportunity to insure her health is optimal for a pregnancy. Her health care provider is in a unique position to offer counseling on medical care and behavior modification, if applicable. This article will address appropriate preconception screening.

Medical/ Surgical History

When medical conditions are present, often more control is required to reduce pregnancy complications. This is most evident in hypertension and diabetes where medications are limited due to teratogenicity concerns and target goals are stricter. Regarding thyroid disease, disorders involving antibodies (antimicrosomal) have been associated with a higher risk of miscarriage and preterm delivery. Low dose thyroid replacement in euthyroid patients with antimicrosomal antibodies may reduce these complications as suggested in a Journal of Clinical Endocrinology & Metabolism article. Additionally, thyroid replacement is recommended in subclinical hypothyroid pregnant patients to reduce cognitive developmental problems in the fetus. This is due to the fetus being dependent on adequate maternal thyroid levels during the first trimester until independent thyroid function begins.

While extremes of body weight have been known to influence and even cease ovulation function, elevations of body mass index have now been shown to reduce pregnancy rates particularly with In-vitro Fertilization. As a result, ideal body weight before pregnancy will improve pregnancy rates and reduce gestational hypertension and diabetes, still birth and Cesarean section.

Physical examination may suggest indolent disease such as insulin resistance (acanthosis nigricans) often found in Polycystic Ovarian Syndrome patients. A CBC should also be included in any women contemplating pregnancy to screen for anemia.

Genetic History

Certain populations are more susceptible to particular hereditary genetic diseases. The following screens are recommended to avoid affected offspring (see Table). Both parents require testing when one is a carrier and are then referred to a genetic counselor to discuss transmission risk. In-vitro Fertilization with Preimplantation Genetic Diagnosis is an exciting technology now available at our center and a select others to screen embryos for the known genetic disease to avoid inheritance and virtually eliminate the disease from the family gene pool.

Disease	Population at risk
Cystic fibrosis	Caucasian of European and Ashkenazi

	Jewish Descent
Sickle cell	African American
Tay-Sachs	Ashkenazi Jews, French Canadians, Cajuns
Beta-thalassemia	Mediterranean, Southeast Asian, African American
Alpha-thalassemia	African American and Asian, especially from Thailand
Gaucher's, Canavan, and Niemann-Pick	Ashkenazi Jew

Medications

The PDR is a valuable tool to determine the pregnancy category of any medication. As the category rating increases from A, B, C, and D, the medication is carefully prescribe to weigh the risk vs. the benefit. Category X medications are absolutely contraindicated in pregnancy. All physicians should consult the pregnancy category of a drug when prescribing for women of reproductive years that are not using reliable contraception to avoid the risk of teratogenicity.

Fortunately, there is enough evidence that folic acid can greatly reduce the risk of neural tube defect so it is imperative to place all pregnant women (preferably three months before conception) on adequate folic acid at least 0.4mg per day. Most prenatal vitamins contain 1mg of folic acid.

Immunizations

Three viruses that can cause significant pregnancy complications are rubella, varicella, and hepatitis B. Since all of these now have effective vaccines, they should be screened in women desiring conception. Rubella can be administered as part of the MMR and, along with the varicella vaccine, now only requires a one month delay in conception as recommended by the CDC. Whereas rubella is a single dose vaccine, varicella and hepatitis B require two and three vaccinations, respectively. HIV screening is strongly recommended by the American College of Obstetricians and Gynecologists. Other STDs and tuberculosis can be screened as clinical suspicion dictates.

Miscellaneous

Substance abuse counseling should include cigarette smoking cessation since risk with pregnancy includes low birth weight, placental abruption, preterm rupture of membranes, avoiding excessive alcohol, or recreational drug use. Domestic abuse and violence should be asked of all women, particularly preconception since pregnancy may increase the susceptibility of women. Nutrition/Environmental concerns include maintenance of a proper diet and avoidance of inadvertent X-ray exposure.

To quote an old axiom, "*An ounce of prevention will always been better than a pound of cure.*"