

Preconception care essay



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Preconception care is the care woman gets before pregnancy and before her baby is born to improve pregnancy outcomes. This includes health care, along with education and counseling as to how to handle different aspects of pregnancy (Preconception care, NICHD). The US Public Health Service Expert Panel on the Content of Prenatal Care (1989) has stated that the visit before conception is one of the most important prenatal visits (Bernstein, 2002).

This is because woman's health before pregnancy has a great effect on her health during pregnancy and thus a major determinant of the outcome of the pregnancy both for her and her child (Bernstein, 2002). Reducing Genetic Risks for the Fetus Woman must be counseled to beget children before 35 years of age. This is because; various studies have shown that child bearing after 35 years of age poses a higher risk of medical problems during pregnancy and chromosomal abnormalities in the fetus. Sometimes, older couple may be benefited by antenatal testing for genetic disorders in the fetus.

These include procedures like amniocentesis and chorionic villus sampling (Brundage, 2002). Those with family history or ethnic background of certain genetic disorders like sickle cell anemia, thalassemia, Tay Sachs's disease, etc., should go in carrier screening. Infact, in many countries, premarital carrier screening for thalassemia and sickle cell anemia has been made mandatory. Those with family history of cystic fibrosis and nonsyndromic hearing loss (connexin-26) should also be referred for preconception screening (Brundage, 2002).

Research has shown that taking folic acid before conception reduces the incidence of neural tube defects, including spina bifida and anencephaly. The recommended dose of folic acid is at least 400 mcg, beginning at least one month before conception and continuing through the first three months of pregnancy. In women with diabetes mellitus and epilepsy, a dosage of 1mg per day is recommended (Brundage, 2002). Also, for mothers who have given birth to children with neural tube defects previously, it is recommended to take 4 mg of folic acid per day for subsequent pregnancies (Brundage, 2002).

Congenital Infections with Viruses Preconception testing for human immunodeficiency virus (HIV) is important and beneficial. Women with HIV positive status should be advised against getting pregnant to prevent mother-to-child transmission. Pregnant women with HIV infection may prevent infecting their child with HIV by antiretrovirus therapy during pregnancy, delivery and in the new-born period. Early screening and treatment of syphilis reduces the risk of congenital infection to the baby. Preconception, women should be immunized against hepatitis B, rubella and varicella.

Rubella and varicella are live-virus vaccines should be given at least one month before conception (Brundage, 2002). Other diseases which need to be screened for preconception are cytomegalovirus, toxoplasmosis and herpes. The viral diseases can affect the fetus and lead to multiple complications in the child. Toxoplasma can cause hydrocephalus with diffuse intracranial calcifications and chorioretinitis. Syphilis affects the skeletal system and leads to osteochondritis (metaphyseal plates), periostitis, symmetric

osteomyelitic lesions of the humerus and tibia and saber shins (Laartz, 2006).

It also causes hemolytic anemia in the baby. Infection with cytomegalovirus leads to microcephaly with periventricular calcifications, thrombocytopenia and purpura, hepatitis, interstitial pneumonitis and late and progressive hearing loss (Laartz, 2006). Rubella causes cataracts, glaucoma, chorioretinitis and patent ductus arteriosus (Laartz, 2006). Herpes simplex virus can lead to hepatitis, chorioretinitis, pneumonitis and fever (Laartz, 2006). Varicella infection during pregnancy can lead to skin scarring and limb trophy (Laartz, 2006).

Another important infection that needs to be prevented during pregnancy is Parvo virus B19 which can cause hydrops fetalis and anemia (Laartz, 2006). Environmental Factors Affecting Pregnancy Environmental toxins affect fetus during organogenesis and cause defects in the baby. It has been estimated that drug or chemical exposure causes 3 to 6 percent of anomalies (Brundage, 2002). The severity of anomaly depends on the amount of exposure, the duration of exposure and also the timing of the exposure. Exposure to certain toxins before 17 days of conception can lead to fetal death (Brundage, 2002).

Exposure from days 17 to 56 a toxin can cause a structural anomaly, and after day 56, a functional impairment (Brundage, 2002). Some of the drugs which should be avoided during pregnancy and in the preconception period are, analgesics like aspirin and ibuprofen, antibiotics, anticoagulants, antidepressants, antifungals, anticonvulsants, antivirals, etc. Those at work

should identify and determine hazardous substances and avoid them before and during pregnancy. Pregnant women should avoid prolonged exposure to pesticides and to solvents such as paint thinners and strippers at home and work place.

Ionizing radiation (radiography and radioactive materials) can cause genetic damage in the embryo. Smoking can cause miscarriage, low birth weight and attention-deficit disorder in the child. It can increase perinatal mortality (Brundage, 2002). Women should also avoid consuming alcohol because it can lead to mental retardation, malformation, growth retardation, miscarriage, and behavioral disorders in infants (Brundage, 2002). Use of illicit drugs like cocaine, marijuana and heroin should be stopped before conception. Cocaine causes miscarriage, prematurity, growth retardation, and congenital defects in the fetus.

Marijuana can cause prematurity and jitteriness in the neonate. Consumption of heroin during pregnancy may lead to intrauterine growth restriction, hyperactivity, and severe neonatal withdrawal syndrome (Brundage, 2002).

Effect of Chronic Illnesses Studies have shown that poorly controlled diabetes mellitus during pregnancy can lead to spontaneous abortion and several congenital anomalies in the fetus which include patent ductus arteriosus and macrosomia. Hence it is important to manage diabetes intensively before conception. Insulin is the drug of choice for women with type 1 and type 2 diabetes mellitus during pregnancy (Brundage, 2002).

Those with chronic hypertension are more prone to preeclampsia, renal insufficiency, and fetal growth retardation. The drugs useful for managing

hypertension during pregnancy are methyldopa and calcium channel blockers. Angiotensin-converting enzyme inhibitors, angiotensin II receptor antagonists and thiazide diuretics are associated with congenital defects and should be avoided during pregnancy (Brundage, 2002). Children born to epileptic mothers have an increased risk of developing congenital anomalies either due to genetic background or due to the anticonvulsant medication.

Preconception counseling in these patients includes optimizing seizure control, prescribing folic acid supplements with a dosage of about 1 to 4 mg per day, and genetic counseling (Brundage, 2002). It is important to reduce the number of drugs as much as possible during pregnancy. Women with personal or family history of venous thromboembolism should be tested for thrombophilia before pregnancy, because there is good chance for deep vein thrombosis to occur during pregnancy (Brundage, 2002). Since warfarin is teratogenic, the patient should be started on heparin.

For those on treatment for depression, tricyclic antidepressants and selective serotonin reuptake inhibitors are safe drugs during pregnancy.

Benzodiazepines are better avoided because they can cause anomalies such as cleft lip and palate, as well as a withdrawal syndrome in the newborn (Brundage, 2002). Other Factors Regular moderate exercise is actually beneficial during pregnancy and the mother should not be advised against it. Hot tub use and vigorous exercise can cause hyperthermia in the fetus and can lead to congenital anomalies.

Obesity can contribute to hypertension, preeclampsia, diabetes, and delivering a large infant. Hence obese women should be advised to lose

weight before conception. However, during conception and pregnancy, dieting is not advisable. Women who are underweight due to poor nutrition can have babies with low birth weight and prematurity. Besides addressing weight, the constituents of the diet also should be taken care of. Strict vegans may have deficiencies in amino acids, zinc, calcium, iron, and vitamins D and B12 (Brundage, 2002).

Also, it is advisable not to take vitamin A or vitamin D in excess. These vitamins, in overdoses can lead to fetal anomalies. Higher amounts of caffeine consumption can lead to increased rates of abortion and low birth weight. Since many women tend to develop deficiency of calcium and iron during pregnancy, it is advisable for women in child bearing age to take iron and calcium supplements. Since women are prone to domestic violence, physicians should assess this factor during routine check-ups. If necessary, community support must be provided for those who are victims of domestic violence.

Those seeking preconception services should also be assessed about financial status, employment comforts and family support. Preconception health care is important to deliver a healthy baby and go through safe pregnancy.

During the check up, the physician must advise the woman to take folic acid, iron and calcium supplement, must assess proneness to genetic diseases and evaluate for them accordingly, and must look for infectious conditions and toxic afflictions which can affect the fetus and deal with them appropriately. Also, advice about healthy diet and life style and monitoring of chronic diseases must be done.