

Lec. 3A | Preconception care

When should preconception care be offered?

- Premarital care
- Postpartum and family planning visits
- At a defined preconception visit

Elements of preconception care

- Risk assessment
- Health promotion
- Medical and psychosocial interventions

Basic Components of PC visit

21 years old nurse presented to the clinic for prepregnancy advice. She works in pediatric oncology unit. She denies family history of genetic or chromosomal anomalies. Her BMI is 31 Kg/m² and blood pressure is 120/70 mmHg. Otherwise, she is clinically free.

- 1- What is the nutritional advice needed for this woman?
- 2- What can you advise her about the workplace risks?
- 3- What are the necessary interventions for her?

History

- Medical history (conditions, drugs used)
- Obstetric history
- Environmental history
- Psychosocial issues (violence, birth spacing)
- Family history
- Nutrition assessment

Physical exam

- Weight, vitals
- Medical disorders
- Genital exam when feasible

Laboratory tests

- Rh group
- Complete blood count
- Rubella status

Other investigations

According to the specific condition

- Infection screening
- Genetic screening
- Drug levels
- Tests for control of specific medical conditions

Interventions

- Folic acid supplementation
- Rubella vaccination
- Others according to the condition

Neural Tube Defects

- ✎ Neural tube defects generally occur **by 26-28 days post-conception.**
- ✎ By this time, most of the women do not know they are pregnant
- ✎ Up to 70% of these defects may be prevented by preconception supplementation with folic acid

Prevention of Neural Tube Defects

- ◆ **Supplementation for all women of childbearing potential with folic acid**
 - No history of NTD: 0.5 mg daily.
 - Prior infant with NTD: 5.0 mg daily
 - Woman with NTD: 5.0 mg daily
 - coeliac disease, diabetes, sickle cell anemia, and treatment of epilepsy: 5 mg daily
- ◆ **Nutritional sources often inadequate**

Rubella

Rubella Vaccination

- Determine rubella immunity prior to conception (IgG)
- Vaccinate susceptible non-pregnant women
- Congenital rubella syndrome may result from infection during pregnancy (microcephaly, fetal growth restriction, cardiac malformations, etc.)
- Women should prevent pregnancy 4 weeks after the vaccination
- However, if this accidentally took place, termination is not required.



Preconception care Interventions (Vaccination): NB

| Vaccine | During pregnancy |
|--|---|
| Hepatitis A | Yes, if at risk |
| Hepatitis B | Yes, if at risk |
| HPV | No |
| Influenza TIV trivalent inj. Vaccine | Yes |
| Influenza LAIV live alternative inj. Vaccine | No |
| MMR | No |
| Meningococcal | If indicated |
| Pneumococcal | If indicated |
| Tetanus/ diphtheria Td >2 only | Yes, Tdap preferred if >20 weeks gestation Tdap preference |
| Varicella | No |

Health Promotion

- Counseling for all women
- Counseling for special subgroups of women

Counseling for all women

- Nutrition
- Environmental counseling
- Tobacco, substance abuse
- Birth spacing
- Drug use

Nutritional Risks

- **Underweight (BMI < 19.8 pre-pregnant)** Increased risk for: low birth weight, fetal death, mental retardation
- **Overweight (BMI 26.1-29.0) and Obese (BMI >29.0)** Increased risk for: diabetes, hypertension, thromboembolic disease, macrosomia, birth trauma, abnormal labor, cesarean delivery
- **Over supplementation of Vitamins A** (limit to 3,000 IU /day) & D (limit to 400 IU/day) - Associated with an increase in congenital anomalies
- **Iron Deficiency** – Associated with increased risk of preterm delivery and low birth weight
- **Lactose intolerance**- need calcium supplementation

What are Environmental Teratogens?

- 1- Home
- 2- Workplace
- 3- Environment

Workplace Environmental exposure risks:

- Clinical and laboratory health care
- Dry cleaning
- Printing
- Agriculture

Household exposures: Paint thinners, solvents, and pesticides

Others e.g., hyperthermia (neural tube defects), cat litter, raw meat and unclean vegetables (toxoplasma infection)

Environmental Counseling

- » Avoid hot tubs, saunas (NTD), and x-rays.
- » Stay away from toxic chemicals like insecticides, solvents, mercury and lead.
- » Avoid cat litter, garden soil and raw meat (Toxo).
- » Frequent hand washing (Toxo)

Tobacco

Associated with placental separation, preterm delivery, placenta previa, miscarriage.
Smoking cessation results in increased birth weight.

Birth spacing

- A short pregnancy interval (less than 18 months) may be associated with:
 1. Birth of SGA infant in a subsequent pregnancy
 2. Preterm birth in a subsequent pregnancy

Summary

- ✎ Preconception care for low-risk pregnancy includes folic acid supplementation (400 micro gram daily), assessment of rubella status and vaccination if needed and counseling for environmental hazards and teratogens.
- ✎ Preconception counseling for specific groups of women

Specific Preconception Genetic Counseling and Screening

- Family history of genetic diseases
- Discussion of age-related risks
- Discussion of disease-related risks
- Carrier screening