

# **Drugs Used During Pregnancy & Lactation**

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## **Objectives**

**a. Discuss the principles of prescribing drugs during pregnancy, lactation and menstruation.**

**b. Discuss the physiological changes occurring in**

pregnancy that affect the  
pharmacodynamics and  
pharmacokinetics in mother.  
c. Define a teratogen and list  
important teratogenic drugs  
with their teratogenicity.

**Distribution:**  
**metabolism**  
**Elimination:**

# factors affecting placental drug transfer & Fetal tissue

- Physicochemical properties of drug
- Rate at which drug crosses placenta & amount of drug reaching the fetus
  - Duration of exposure to drug
- Distribution characteristics in different fetal tissues
- Stage of placental & fetal development at time of exposure to the drug
  - Effects of drugs used in combination

## **TERATOGENESIS**

***A teratogen* is a chemical substance that can induce a malformation during development.**

## **Principles of teratology**

- Teratogens act with specificity. A teratogen produces a specific abnormality or constellation of abnormalities. Eg. thalidomide produces phocomelia, and valproic acid produces neural tube defects.
- Teratogens demonstrate a dose-effect relationship.
- Teratogens must reach the developing conceptus in sufficient amounts to cause their effects.
- The effect that a teratogenic agent has on a developing fetus depends upon the stage during development when the fetus is exposed.

## **Mechanisms of Teratogenesis**

- Genetic interference, gene mutation, chromosomal breakage, interference with cellular function, enzyme inhibition, and altered membrane characteristics.
- The response of the developing embryo to these insults is failure of cell–cell interaction crucial for development,

interference with cell migration, or  
mechanical cellular disruption.

examples  
**PRESCRIBING IN  
PREGNANCY**

Prescribing in pregnancy is a balance between the risk of adverse drug effects on the fetus and the risk of

# leaving maternal disease untreated.

- minimize prescribing;
- use ‘tried and tested’ drugs whenever possible in preference to new agents;
- use the smallest effective dose;
- remember that the fetus is most sensitive in the first trimester;
- consider pregnancy in all women of childbearing potential;
- discuss the potential risks of taking or withholding therapy with the patient;
- seek guidance on the use of drugs in pregnancy in the British National Formulary, Drug Information Services, National Teratology Information Service (NTIS);
- warn the patient about the risks of smoking, alcohol, over-the-counter drugs and drugs of abuse.

# **DRUG USE DURING LACTATION**

- Most drugs administered to lactating women are detectable in breast milk.

Fortunately, the concentration of drugs achieved in

breast milk is usually low.

- Infant would receive in a day is substantially less than what would be considered a “therapeutic dose.”
- If the nursing mother must take medications and the

drug is a relatively safe one, she should optimally take it 30–60 minutes after nursing and 3–4 hours before the next feeding.

- Caution: Sedative-Hypnotics, Lithium  
Tetracyclines

**THANK YOU**