**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