Balancing the Risk-Benefit See-Saw:
Choosing Medication for the Pregnant or Lactating Perianesthesia Patient
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Outline
Drug Categories:

A - Substance fails to demonstrate a risk to the fetus in the first trimester and there is not evidence of risk in later trimesters.

B- Either animal studies have not demonstrated a fetal risk but there are no controlled studies in pregnant women or animal reproduction studies have shown an adverse effect that was not confirmed in controlled studies in women in the first trimester with no evidence of a risk in later trimesters.

C- Either studies in animals have revealed adverse effects on the fetus and there are no controlled studies in women or studies in women and animals are not available. Drugs should be given only if potential benefit justifies potential risk to the fetus.

D- There is positive evidence of human fetal risk but the benefits from use in pregnant women may be acceptable despite the risk.

X- Studies in animals or humans have demonstrated fetal abnormalities. The risk of the use of the drug in pregnant women clearly outweighs any possible benefit. The drug is contraindicated.

~65% of medications are Class C

Teratogen
Substance that produces an increase in the incidence of a particular defect that cannot be attributed to chance.
- Embryo most vulnerable to major organ defects 4-10 weeks gestation

Well-known teratogens
   DES (diethylstilbestrol)
   Thalidomide
   Accutane/Isotretinoin

What crosses the placenta?
EVERYTHING!
Exceptions: Molecular weight of drugs >1,000g/mol cannot (Insulin, heparin)

PONV: Antiemetics
Promethazine/Phenergan phenothiazine
12.5-25 mg q4h class C

Metoclopramide/Reglan
5-10 mg q8h class B

Ondansetron/Zofran (or any other 5-TH3 antagonist)
4-8 mg q8h class B

Hydroxyzine/Vistaril antihistamine
class C- contraindicated by manufacturer

Aluminum hydroxide/Maalox B
Calcium carbonate/TUMS C
Simethicone/Mylcon C
Ranitidine/Zantac B
Famotidine/Pepcid B

Pain medication - Risk vs. Benefit
Decreased functional residual capacity/ increased oxygen consumption
Increased susceptibility to hypoxia
NSAIDS should not be used in pregnancy because of the risk of premature closure of the ductus arteriosis
This is a relative contraindication
NSAIDS class B/B/D

Tylenol always OK
Opioids really are OK in pregnancy
Class C/D - (neonatal effects of prolonged use)
  Morphine
  Fentanyl
  Hydromorphone

Antibiotic use in pregnancy- All cross placenta, limited EBP for safety
  B-lactams (class B)
  Considered safe in pregnancy/lactation

Aminoglycosides
  Gentamycin
    possibility of nephro- or oto-toxicity in fetus, not proven
  Clindamycin (class B)
  Considered safe in pregnancy/lactation
  Vancomycin (class B)
    Possibility of nephro- or oto-toxicity in fetus, not proven, limited data

Fluoroquinolones (class C) Ciprofloxacin
  Levofooxacin
    Possibility of bone/cartilage damage in fetus, not proven, no good trials

Doxycycline/tetracycline (class D) May cause permanent staining of adult teeth when used in pregnancy or lactating women, possibility of bone/cartilage damage in fetus

Rifampin (class C)- TB, unlikely risks

HTN-if left untreated this can cause harm to mother & fetus ACE inhibitors are class X- IUGR, oligohydramnios, renal defects
  Aldomet
  Labetalol

Hydralazine
Nifedipine
500,000 women of childbearing age have epilepsy
One in every 250 pregnant women (~0.4%) takes an anticonvulsant drug
Seizure history 9-12 months pre-pregnancy reasonably predictive for during pregnancy
Pregnancy does not increase seizure risk
Discontinuation or inadequate treatment of maternal epilepsy may be more dangerous to the fetus than effective anticonvulsant therapy.
Use the fewest number of drugs and the lowest dose possible
Benzodiazepines control most prolonged seizures, first-line treatment choice.

Resources Online
http://www.aafp.org/afp/20030615/2517.html
http://www.obfocus.com/high-risk/meds1.htm
http://www.cdc.gov/ncbddd/meds/
http://content.nejm.org/cgi/content/full/338/16/112

References