What to Expect When Your Patients Expecting

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Disclosures

• None

Congratulations, you’re pregnant!....

Now, here’s a list of all the things to worry about . . . . .

But why are we worried

• Spontaneous abortion of the pregnancy
• Transference of medication both during pregnancy and during breastfeeding
  • Causing complications during pregnancy for both mother and child
  • Birth defect rates from medication use
  • Topical vs Oral

New FDA Pregnancy and Lactation Categories

• 8.1 Pregnancy includes labor and delivery
• 8.2 Lactation including nursing mothers
• 8.3 Females and males of reproductive Potential

Old FDA Pregnancy and Lactation Categories

• Category A
  • The safest drugs to take during pregnancy. Controlled studies show no risk or find no evidence of harm
• Category B
  • Animal studies show no risk but there are no controlled studies on pregnant women
• Category C
  • Animal studies have shown risk to the fetus, there are no controlled studies in women, or studies in women and animals are not available
• Category D
  • There is positive evidence of potential/final risk, but the benefits from use in pregnant women may be acceptable despite the risk (i.e. life threatening condition to mother)
• Category X
  • Studies in animals or human beings have demonstrated fetal abnormalities, or there is evidence of fetal risk. The drug is contraindicated in women who are or may become pregnant

Optometrist Prescribing for Pregnant Patients
When in doubt....

Contact the patients OB/GYN

Oral Medication

- Can NOT be prescribed
  - Antibiotics
    - Chloramphenicol, erythromycin, ciprofloxacin, doxycycline, tetracycline, sulfonamides, metronidazole
    - Steroids in category B
  - Pain relief
    - Codeine, hydrocodone/acetaminophen
- Steroids
  - Category C
  - Contraindicated due to beta agonist effect and risk of OIH
  - Call OB/GYN

Oral Medication

- CAN be prescribed
  - Antivirals
    - Oral Acyclovir, Valcyclovir, Famcyclovir
    - Category B
    - Oral Acyclovir is OK for lactating women
  - Antibiotics
    - Often needed for skin and soft tissue infections
    - Augmentin, erythromycin, azithromycin, amoxicillin
      - Category B
    - Pain relief
      - Tylenol
  - Steroids
    - Category C
    - Contraindicated due to their teratogenic effect and role in CSR
    - Call OB/GYN

Topical Medications

- Dilation drops
  - Occasional is acceptable: risk vs benefit
  - Alternative: consider shorter acting agents
    - Tropicamide 0.5%
      - Category C
  - NO phenylephrine
    - May cause fetal heart to beat too slowly or cause birth defects
  - Minor fetal malformations reported with use of systemic phenylephrine, atropine and homatropine

Topical Medications

- Antibiotics drops
  - Similar to oral
  - Fluoroquinolones used when benefit/risk, consult OB/GYN
  - Tobramycin category B, safe for use
  - Less severe bacterial infection
  - Erythromycin, polymyxin B, topical azithromycin
  - Severe ulcers or bacterial keratitis
  - Fortified cephalosporins category B

Topical Medications

- Allergy drops
  - All except Lastacaft are category C and not recommended
  - Anesthetic
    - Proparacaine is Category C

Misc

- Anti-VEGF
  - Systemic absorption is low
  - Ranibizumab can't cross the placenta barrier but is category C
  - Could still affect placental circulation
  - Ranibizumab is category C
  - Pegaptanib (Macugen) is category B
**Ocular and Systemic Changes During Pregnancy**

**Refractive Shifts**
- Hormonal changes during first trimester cause changes in:
  - Water retention
  - Increase in lens curvature
  - Accommodation loss and insufficiency
- Resolve shortly after breastfeeding discontinued
- Other less common causes
  - Shifts in cataracts, DM, accommodative spasm
- Usually a myopic shift but hyperopic can also occur

**Dry Eye Disease**
- Changes to cornea and lacrimal system can lead to DED or worsening of pre-existing DED
- Changes have been noted in tear film physiology
- Possible immune reaction to the lacrimal duct cells and destruction of acinar cells by prolactin
- Physical dehydration from nausea and vomiting
- Secondary contact lens intolerance
- Decrease in corneal sensitivity in third trimester

**Bells Palsy**
- Facial palsy caused by compression or inflammation and swelling of the facial nerve
- Usually only one side of the face
- Rarely both sides
- Can occur at any age
- Rapid onset of mild weakness to total paralysis on one side of the face
- Within hours to days
- Facial droop
- Drooling
- Pain around jaw or behind ear on affected side
- Decreased taste
- Changes in amount of tears and saliva produced

**Risk Factors**
- Any pregnant, especially during the third trimester, or who are in the first week after giving birth
- Have an upper respiratory infection, such as the flu or a cold
- Have diabetes
Causes of Bell's Palsy

- Often related to viral infection
  - Herpes simplex
  - Chickenpox and shingles (herpes zoster)
  - Infectious mononucleosis (Epstein-Barr)
  - Cytomegalovirus infections
  - Respiratory illnesses (adenovirus)
  - German measles (rubella)
  - Mumps (mumps virus)
  - Flu (influenza B)
  - Hand-foot-and-mouth disease (coxsackievirus)

- Less often
  - Tumor
  - Skull fracture

Ordering an MRI or CT to help rule out these causes

Treatment

- Most people will recover with or without treatment
- Will start to improve within a few weeks with complete recovery within about 6 months
- Occasionally permanent symptoms for life
- Can recur
- Oral corticosteroids
  - Helps decrease swelling of facial nerve
- Antiviral drugs
  - Although studies have shown no benefit compared with placebo

IOP Variations

- Studies have found IOP tends to decrease during pregnancy
  - 19.6% reduction in patients with normal IOP
  - 24.4% reduction for OHTN patients
- Possible Explanation:
  - Increased aqueous outflow
    - Lower episcleral venous pressure due to decreased systemic vascular resistance
  - Lower scleral rigidity resultant of increased tissue elasticity
  - General acidosis during pregnancy
- Returns to normal approx 2 months post partum

Adnexa Changes

- Increased pigmentation around the eyes may occur
  - "pregnancy mask", Cloasma, or melasma
- Caused by increased estrogen, progesterone and melanocyte stimulating hormone
- Occasional unilateral ptosis occurs
- Returns to prior position after delivery
- Thought to be result of fluid and hormonal effects on the levator aponeurosis

Gestational Diabetes

- Like other types of diabetes, gestational affects how your body uses glucose
- Gestational DM has a small risk of developing retinopathy
- 10% of patients with gestational diabetes develop NPDR during pregnancy
- Baseline examination in first trimester is usually sufficient when pt is absent of visual symptoms

Diabetic Retinopathy

- Patients who already have DM and diabetic retinopathy may note quick progression
  - 10% of patients with NPDR show 50% progression during pregnancy
  - 5-20% of patients with severe NPDR progress to PDR
  - Up to 40% of patients can be seen in pts who already have PDR

AOA Practice Guidelines

- Gestational Diabetes
  - Occurs in second to third trimester and glucose tolerance usually returns to normal within 6 weeks after pregnancy ends
  - Since it is relatively short and temporary it does not have a high likelihood they will develop retinopathy
  - Retinal evaluation for diabetic retinopathy in these patients is not indicated

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AOA Practice Guideline

- Diabetes Mellitus Type I and II
  - Women with pre-existing diabetes who are planning on being pregnant or become pregnant
  - Should have a comprehensive eye exam prior to planned pregnancy or during first trimester
  - Should have a follow-up each trimester of pregnancy

Preeclampsia/Eclampsia

- Preeclampsia triad in a normotensive pregnant woman
  - BP > 140/90 mmHg
  - Edema
  - Proteinuria after 20th week of pregnancy
  - This triad plus contractions without any other cause is eclampsia

- Preeclampsia/Eclampsia
  - Preeclampsia incidence is 5%
  - Ocular sequelae in 1 out of 3
    - Blurred vision
    - Photopsia
    - Scotoma
    - Diplopia
  - Signs of retinopathy mimic HTN retinopathy
  - Most common finding vitreal arteriolar narrowing
  - Will return to normal after patient is post partum

Multiple Sclerosis

- Patients with MS may note a decrease in attacks during pregnancy
- Will possibly increase the first 3 months postpartum
- Optic Neuropathy may occur as a result of increased intracranial pressure

Idiopathic Intracranial Hypertension

- Increased intracranial pressure with no known cause causing bilateral edematous ONH
- Visual field defects, OCTG elevation
- Diplopia and photopsia less often
- Headaches and tinnitus
- Caused by increase in weight during pregnancy that triggers and overproduction of CSF

IIH Treatment

- Diagnosis with MRI without contrast of brain and orbit followed by LP to confirm diagnosis
- Based on exclusion
- Pts are usually monitored with no treatment given the possible side effects to the fetus from Diamox and Topamax
- Serial LP throughout pregnancy and sometimes a tube shunt or OHN fenestration if vision is at high risk

What's causing this?
### Pituitary Adenoma
- Previously asymptomatic PA or microadenomas may grow during pregnancy
- Headaches
- Visual field changes (bitemporal)
- Decreased VA
- After pregnancy will usually shrink
- If patient is known to have this prior to pregnancy, should monitor with visual fields for tumor growth

### Pituitary Gland
- Patients without a pituitary adenoma can also experience visual field defects when the pituitary gland grows during pregnancy
- Can mimic PA VF defects with a bitemporal defect

### Graves disease
- Most common cause of hyperthyroidism during pregnancy
- May exacerbate during first trimester
- Tends to subside during the rest of pregnancy
- Re-exacerbate during postpartum period
- Usually treat with propylthiouracil

### Central Serous Retinopathy
- Noted decreased vision with unilateral or bilateral metamorphopsia
- Believed to be caused by increased levels of endogenous cortisol
- Most frequently occurs in the third trimester
- Will resolve a few months after delivery
- Increased risk for recurrence in future pregnancies
- Study by Perkins et al.
  - 90% of pregnant CSR patients had fibrous subretinal exudate
  - Only 20% of non-pregnant CSR patients had this

### Toxoplasmosis
- Parasitic disease by *Toxoplasma gondii*
  - Eating undercooked contaminated meat
  - Infected cat litter
  - Mother to child transmission during pregnancy
  - Congenital infection occurs when primary infection during pregnancy
  - Transplacental transmission

### Toxoplasmosis
- First trimester infection can severely affect the fetus
- More commonly occurs in third trimester
- Maternal and fetal circulation in greater contact
- Latent infection in mother may become active
  - Retinochoroiditis findings

### Toxo Treatment
- Mother can be treated with oral macrolide antibiotic spiramycin
- Avoid sulfadiazine/trimethoprim combo
- Cessus meningitis
- OB/GYN involvement

### Wrap Up
- Remember what's ok to use and when in doubt ask the patient OB/GYN
- Knowing what your pregnant patient may be experiencing or is at risk for is important

### Questions?
Thank you!