Ambulatory Problems in OB Care

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Disclosures

• None
Objectives

- Review contemporary issues encountered in ambulatory care of pregnancy
  - Antibiotics for UTI and birth defects
  - Prior preterm birth
  - Group B streptococci
  - Cystic fibrosis screening
  - Vaccinations in pregnancy
  - Aneuploidy screening
  - Screening for gestational diabetes
  - Recurrent pregnancy loss

Case 1

- LG is a 28 year old G1 who complains of urinary frequency and dysuria at 8 weeks gestation. Her point of care UA shows positive nitrates and leukocyte esterase and microscopy shows WBC 5-10 WBC per HPF. Gram stain shows Gram neg rods.
- Which antibiotic class would you consider as first line for treatment?
  - A) cephalosporin
  - B) sulfa
  - C) nitrofurantoin
  - D) fluoroquinolone
Antibacterial Medication Use During Pregnancy and Risk of Birth Defects

National Birth Defects Prevention Study

Crider et al. ARCH PEDS ADOLESC MED/VOL 163 NOV 2009 p. 978

Committee on Obstetric Practice

This document reflects emerging clinical and scientific advances as of the date issued and is subject to change. The information should not be construed as dictating an exclusive course of treatment or procedure to be followed.

Sulfonamides, Nitrofurantoin, and Risk of Birth Defects

Abstract: The evidence regarding an association between the nitrofuran and sulfonamide classes of antibiotics and birth defects is mixed. As with all patients, antibiotics should be prescribed for pregnant women only for appropriate indications and for the shortest effective duration. During the second and third trimesters, sulfonamides and nitrofurantoin may continue to be used as first-line agents for the treatment and prevention of urinary tract infections and other infections caused by susceptible organisms. Prescribing sulfonamides or nitrofurantoin in the first trimester is still considered appropriate when no other suitable alternative antibiotics are available. Pregnant women should not be denied appropriate treatment for infections because untreated infections can commonly lead to serious maternal and fetal complications.
Case 2

- JS is a 25 year old G2 P0101 presenting for NOB visit. Her past OB hx signif for prior 30 week spontaneous PTL/PTB of 2#14oz baby who spent 6 weeks in NICU but is currently 3 years old & healthy.
- Which of the following would you recommend for her prior PTB for current pregnancy?
  - A) bedrest
  - B) pelvic rest
  - C) progesterone
  - D) baby aspirin
  - E) folic acid

Case 2

- Which formulation would you recommend given the current scenario?
  A) Micronized progesterone 200 mg daily
  B) 17 alpha hydroxy progesterone caproate (250 mg/ml), 1 ml IM weekly
  C) Either
  D) Neither
Case 2

- At what EGA would you begin treatment?
  A) At first prenatal visit
  B) At 16 weeks
  C) At 24 weeks
  D) At 28 weeks
  E) At 32 weeks

Progesterone to prevent recurrent PTB

<table>
<thead>
<tr>
<th>EGA</th>
<th>Placebo (p=153)</th>
<th>Prog (n=306)</th>
<th>RR</th>
<th>signif</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;37 weeks</td>
<td>55%</td>
<td>36%</td>
<td>0.66</td>
<td>.001</td>
</tr>
<tr>
<td>&lt;35 weeks</td>
<td>31%</td>
<td>21%</td>
<td>0.67</td>
<td>.0165</td>
</tr>
<tr>
<td>&lt;32 weeks</td>
<td>20%</td>
<td>11%</td>
<td>0.58</td>
<td>.018</td>
</tr>
</tbody>
</table>

Dosing

- 17 alpha hydroxyprogesterone caproate
- 250 mg/ml
- 1 ml weekly 16-36 weeks
- Available by rx at compounding pharmacies
  - Pricing ~$100/10 ml supply
- Makena™ now available March 2011
  - FDA approved
  - Threats to compounding pharmacies to “cease and desist”, litigation
  - List price $1500 per dose
- Controversy regarding pricing
  - Pressure from SMFM, ACOG drove down price, KV Pharmaceuticals lowered price 55% to $690/dose
  - Manufacturers has contracted with state medicaid programs for discounted pricing
  - Drug assistance programs available for drug at $20 per dose or even no cost medication

Alternatives & other indications for progesterone use

- 17OH-P not effective in twins
  - Suggests another mechanism for PTB in twins
- Vaginal progesterone 100mg daily
  - RCT 2.7 vs 18.6% PTB in high risk women
- RCT Short cervix by ultrasound @ 20-25 wks gestation, measuring < 15 mm
  - 200 mg micronized progesterone vs placebo from 24-34 weeks
  - 19.2 vs 34.3% PTB, RR 0.56
  - EB Fonseca et al NEJM 2007; 357:462

ACOG Committee Opinion #419 Oct 2008; affirmed 2011
Recent publication on vaginal progesterone used for short cervix

- PREGNANT Multicenter, international RCT
- 465 women with singleton pregnancies with short cervix (defined as 10-20 mm)
  - Randomized to daily 8% progesterone gel (90 mg/applicator) vs placebo gel
    - 19 – 23 6/7 weeks gestation
  - Took until 36 6/7 weeks, PPROM or delivery
  - PTB < 33 weeks RR 0.52
  - PTB < 28 weeks RR 0.50
  - PTB < 35 weeks RR 0.62

SS Hassan et al. Ultrasound ObGyn 2011; 38:18-31

Recommendation

- In all pregnant women with prior spontaneous PTB, consider progesterone
  - Unless twins in the current pregnancy where progesterone does not seem to be effective
Case 3

DC is a 27 year old G1 presenting for new OB visit in the first trimester. She identifies herself as of Hispanic descent. She is wondering if she should have cystic fibrosis screening. To whom do you offer CF screening?

- A) those of Caucasian, Northern European ethnicity
- B) those of Hispanic ethnicity
- C) those of African-American ethnicity
- D) all of the above

Cystic fibrosis carrier screening

Table 1. Cystic Fibrosis Detection and Carrier Rates Before and After Testing

<table>
<thead>
<tr>
<th>Racial or Ethnic Group</th>
<th>Detection Rate* (%)</th>
<th>Carrier Risk Before Testing</th>
<th>Approximate Carrier Risk After Negative Test Result†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ashkenazi Jewish</td>
<td>94</td>
<td>1/24</td>
<td>1/380</td>
</tr>
<tr>
<td>Non-Hispanic white</td>
<td>88</td>
<td>1/25</td>
<td>1/200</td>
</tr>
<tr>
<td>Hispanic white</td>
<td>72</td>
<td>1/58</td>
<td>1/200</td>
</tr>
<tr>
<td>African American</td>
<td>64</td>
<td>1/61</td>
<td>1/170</td>
</tr>
<tr>
<td>Asian American</td>
<td>49</td>
<td>1/94</td>
<td>1/180</td>
</tr>
</tbody>
</table>

*Detection rate data based on use of a 23-mutation panel.
†Bayesian statistics used to calculate approximate carrier risk after a negative test result.
Update on Carrier Screening for CF
ACOG Committee Opinion 486, April 2011

- It is important that CF screening continues to be offered to women of reproductive age. It is becoming increasingly difficult to assign a single ethnicity to individuals. It is reasonable, therefore, to offer CF carrier screening to all patients. Screening is most efficacious in the non-Hispanic white and Ashkenazi Jewish populations.
- It is prudent to determine if the patient has been previously screened before ordering redundant CF screening. If a patient has been screened previously, CF screening results should be documented but the test should not be repeated.
- Complete analysis of the CFTR gene by DNA sequencing is not appropriate for routine carrier screening.
- Newborn screening panels that include CF screening now performed in all states; however, these do not replace maternal carrier screening.
- If a woman with CF wants to become pregnant, a multidisciplinary team should be considered to manage issues regarding pulmonary function, weight gain, infections, and the increased risks of diabetes and preterm delivery.
- For couples in which both partners are carriers, genetic counseling is recommended to review prenatal testing and reproductive options.
- For couples in which both partners are unaffected but one or both has a family history of CF, genetic counseling and medical record review should be performed to identify if CFTR mutation analysis in the affected family member is available.
- If a woman’s reproductive partner has CF or apparently isolated congenital bilateral absence of the vas deferens, the couple should be referred to a genetics professional for mutation analysis and consultation.

Script for counseling CF screening

- Cystic fibrosis (CF) is a genetic disorder that causes breathing and digestive problems. Intelligence is not affected by CF.
- Individuals with CF have a current life expectancy of approximately 37 years, and the cause of death usually is lung damage. Approximately 15% of individuals with CF have a mild form of the disease and live an average of 56 years. Common symptoms of CF include coughing, wheezing, loose stools, abdominal pain, failure to thrive, and, in men, infertility. Treatment involves medication to aid digestion, proper nutrition, and lung therapy.
- Cystic fibrosis is an inherited condition that is caused by mutations in the CFTR gene. When a patient and her partner are both carriers of a mutation in the CFTR gene, they have a 1 in 4 chance of having a child with CF.
- To date, more than 1,700 mutations have been identified in the gene for CF. Screening for the 23 most common mutations is available and can greatly reduce a couple’s risk of having a child with CF.
- The risk of being a carrier depends on an individual’s race and ethnicity and family history. Cystic fibrosis is most common in non-Hispanic white individuals and people of Ashkenazi Jewish ancestry.
- A genetics specialist can help couples with a risk of having a child with CF by explaining and providing information about their reproductive options.
Case 4

- Sally Starbucks is meeting you for her NOB visit. She is a 30 year old G2P0010 at 7 weeks gestation. She describes drinking 3 cups of “full caff” coffee daily. She asks about safety of caffeine intake during pregnancy. She’s worried because she’s heard it has been associated with miscarriage. How do you counsel her?

- A) Caffeine is strongly associated with adverse pregnancy outcome including SAB and she should cut down or quit
- B) Study outcomes are varied but moderate caffeine consumption is probably OK.
- C) No association between caffeine intake and SAB. Keep Starbucks in business and drink as much as you want.

Caffeine intake and miscarriage

- Caffeine crosses the placenta and increases maternal catecholamine levels,
- Concerns have been raised about a potential relationship between caffeine exposure and the incidence of spontaneous miscarriage.
- However, studies investigating the association between caffeine intake and miscarriage have been limited by
  - small sample size and
  - retrospective collection of data influenced by recall bias, particularly in patients interviewed after pregnancy loss.
- Two recent studies attempted to overcome this
  - by prospectively monitoring a large population of women
  - receiving prenatal care before 16 weeks of gestation,
  - collecting data on caffeine consumption during early gestation, and
  - adjusting for relevant confounders

ACOG Committee Opinion #462 August 2010
Caffeine intake and miscarriage

- Savitz et al examined 2,407 pregnancies that resulted in 258 pregnancy losses before 20 weeks of gestation.
- Caffeine exposure was analyzed with respect to intake:
  - none; less than or equal to the median consumption, which was approximately 200 mg per day
  - greater than 200 mg per day
- Three time points were analyzed:
  - 1) before pregnancy;
  - 2) 4 weeks after the most recent menstrual period; and
  - 3) at the time of the interview, which occurred before 16 weeks of gestation.
- Applying an adjusted survival model, levels of caffeine consumption at all three time points and at all levels of consumption were unrelated to the risk of miscarriage.
- Reported caffeine exposure at the time of the interview was associated with an increased miscarriage risk among those women with pregnancy losses before the interview.
  - recall bias
- Ultimately, the study did not show an association between caffeine consumption and miscarriage, regardless of the amount consumed.

Caffeine and miscarriage risk. Epidemiology 2008;19:55–62

Caffeine intake and miscarriage

- Weng et al population-based prospective cohort study
  - women were interviewed regarding caffeine exposure at a median gestational age of 71 days (10 weeks)
  - Caffeine exposure was divided into
    • none,
    • less than 200 mg per day, and
    • greater than 200 mg per day.
  - Of the 1,063 pregnant women interviewed, 172 experienced a miscarriage during their pregnancies.
  - increased risk of miscarriage with higher levels of caffeine consumption,
    • adjusted hazard ratio of 2.23 (95% confidence interval [CI] 1.34–3.69) for intake of 200 mg per day or more.
  - In contrast to the findings of the Savitz et al study, the timing of the interview in relation to a miscarriage did not affect the positive association identified between caffeine consumption and miscarriage.

Am J Obstet Gynecol 2008;198:279.e1–279.e8
Caffeine intake and miscarriage

- Both studies involved appropriate statistical analyses and large study populations, but reached contradictory conclusions.
- Factors that may account for the discrepancy include:
  - 1) differences in populations studied,
  - 2) different analytic approaches, and
  - 3) issues related to the baseline risk of miscarriage and corresponding statistical power.
- Because of the conflicting results of these two large studies, a recommendation regarding higher levels of caffeine consumption and risk of miscarriage cannot be made at this time.
- Neither report demonstrated a significant increase in the risk of miscarriage with levels of caffeine intake less than 200 mg per day.

ACOG Committee Opinion #462 August 2010

What is 200 mg caffeine?

<table>
<thead>
<tr>
<th>Food and Beverages</th>
<th>Milligrams of Caffeine (Average)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Coffee (8 oz)</strong></td>
<td></td>
</tr>
<tr>
<td>Brewed, drip</td>
<td>137</td>
</tr>
<tr>
<td>Instant</td>
<td>76</td>
</tr>
<tr>
<td><strong>Tea (8 oz)</strong></td>
<td></td>
</tr>
<tr>
<td>Brewed</td>
<td>48</td>
</tr>
<tr>
<td>Instant</td>
<td>26–36</td>
</tr>
<tr>
<td><strong>Caffeinated soft drinks (12 oz)</strong></td>
<td>37</td>
</tr>
<tr>
<td><strong>Hot cocoa (12 oz)</strong></td>
<td>8–12</td>
</tr>
<tr>
<td><strong>Chocolate milk (8 oz)</strong></td>
<td>5–8</td>
</tr>
</tbody>
</table>

Candy

- Dark chocolate (1.45 oz) 30
- Milk chocolate (1.55 oz) 11
- Semi-sweet chocolate (1/4 cup) 26–28
- Chocolate syrup (1 tbsp) 3

**Coffee ice cream or frozen yogurt (1/2 cup)** 2


Modified from ACOG Committee Opinion #462 August 2010

Starbucks Grande (16 oz) brewed = 320 mg
Decaf generic brewed (8 oz) = 4-12 mg

Ben & Jerry’s coffee heath bar crunch 84 mg
Case 5

- 27 year old woman G0 with irregular periods and BMI of 31 is presenting for well woman visit. She’s not using contraception and is sexually active with her husband. They would like to become pregnant. Her LMP was 10 weeks ago. You astutely perform a urine pregnancy test which is positive. Because of obesity, you would like to screen early for diabetes.

- What would be current appropriate ways to screen?
  A) 50 gram 1 hour GCT then 100 g 3 hr GTT if abnl
  B) Hemoglobin A1c
  C) Random blood glucose
  D) Any of the above

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**Diagnosis of hyperglycemia in pregnancy** (IADPSG)

**Table 1—Threshold values for diagnosis of GDM or overt diabetes in pregnancy**

<table>
<thead>
<tr>
<th>Glucose measure</th>
<th>mmol/l</th>
<th>mg/dl</th>
<th>Above threshold (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FPG</td>
<td>5.1</td>
<td>92</td>
<td>8.3</td>
</tr>
<tr>
<td>1-h plasma glucose</td>
<td>10.0</td>
<td>180</td>
<td>14.0</td>
</tr>
<tr>
<td>2-h plasma glucose</td>
<td>8.5</td>
<td>153</td>
<td>16.1†</td>
</tr>
</tbody>
</table>

To diagnose overt diabetes in pregnancy

- FPG† ≥ 7.0 mmol/l (126 mg/dl)
- A1C† ≥ 6.5% (DCCT/UKPDS standardized)
- Random plasma glucose ≥ 11.1 mmol/l (200 mg/dl) + confirmation

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International Assn of Diabetes and Pregnancy Study Group Recommendations Diabetes Care 2010; 33:676
STAY TUNED! What about ACOG?

- ADA adopted IADPSG verbatim Diab Care Jan ’11
  - New criteria will increase overall GDM prevalence to ~18% (high risk populations even higher)
    - Only one abnormal value to meet diagnosis
    - “medicalization” of pregnancies previously categorized as normal
- ACOG Committee Opinion 504 September 2011
  - Last affirmation 2008
  - “Ideal approach for screening and diagnosis of GDM remains elusive”
  - “Committee on OB practice continues to recommend 2 step approach with 50 g 1 hr GCT at 24-28 weeks followed by 100g 3 hr GTT”
  - “Dx of GDM can be made on 3 hr GTT, upon which there is evidence that treatment improves outcome”
- NIH consensus conference is planned
From SMFM Annual Meeting, GDM Debate Feb 9, 2011

Factors to Consider Prior to Change in SOC

- Strength of Evidence of Benefit
  - Observational vs. Interventional studies
  - Degree and nature of Treatment Effect
- Evidence of Harm
- Information on “costs”
- Real world application
  - Compliance
  - Practicality

Criteria for diagnosis of diabetes (2011)

Table 3—Criteria for the diagnosis of diabetes

1. A1C ≥6.5%. The test should be performed in a laboratory using a method that is NGSP certified and standardized to the DCCT assay.*  *NEW in 2009*

2. FPG ≥126 mg/dl (7.0 mmol/l). Fasting is defined as no caloric intake for at least 8 h. *

3. 2-h plasma glucose ≥200 mg/dl (11.1 mmol/l) during an OGTT. The test should be performed as described by the World Health Organization, using a glucose load containing the equivalent of 75 g anhydrous glucose dissolved in water.*

4. In a patient with classic symptoms of hyperglycemia or hyperglycemic crisis, a random plasma glucose ≥200 mg/dl (11.1 mmol/l).

*In the absence of unequivocal hyperglycemia, criteria 1–3 should be confirmed by repeat testing.*

Internat’l Expert Committee. Diabetes Care 2009; 32:1327
Dx & Classification of DM. ADA. Diabetes Care 2010: 33:S62, affirmed 2011; 34:S62
Table 2 Diab Care Jan 2011

• Individuals with A1c of 5.7-6.4%
  – should be informed of their increased risk for diabetes as well as CV disease
  – Counseled about effective strategies to lower their risk
    • Weight loss
    • Exercise

Diabetes Care January 2011; 34: S62-69

CAVEATS TO THE A1C FOR DX

• Abnormal hemoglobins
  – Sickle cell trait
• Abnormal red cell turnover
  – Such as iron deficiency
• A1c of > 6.5% identifies \(1/3\) fewer cases of undiagnosed diabetes than a fasting glucose cut point of \(>126\)
Case 6

- The same patient also reports multiple episodes of nausea, vomiting and RUQ pain after meals. GB sono confirms your suspicion of gallstones. OB sono confirms 10 week gestation. How should she be counseled about gallstones & GB surgery during pregnancy?
  - A) Low carb diet
  - B) Surgery should be prudently postponed till postpartum due to risk/complications from surgery
  - C) Surgery should be prudently considered in the 2nd trimester
  - D) Surgery should be performed now

ACOG committee opinion #474 • Feb 2011 (Replaces No. 284, August 2003)

Committee on Obstetric Practice

- Because of the difficulty of conducting large-scale randomized clinical trials in this population, there are no data to allow for specific recommendations. It is important for a physician to obtain an obstetric consultation before performing nonobstetric surgery and some invasive procedures (e.g., cardiac catheterization or colonoscopy) because obstetricians are uniquely qualified to discuss aspects of maternal physiology and anatomy that may affect intraoperative maternal–fetal well-being. The following generalizations may be helpful to guide decision making:
  - No currently used anesthetic agents have been shown to have any teratogenic effects in humans when using standard concentrations at any gestational age.
  - Fetal heart rate monitoring may assist in maternal positioning and cardiorespiratory management, and may influence a decision to deliver the fetus.
  - The following recommendations represent the consensus of the committee:
    - A pregnant woman should never be denied indicated surgery, regardless of trimester.
    - Elective surgery should be postponed until after delivery.
    - If possible, nonurgent surgery should be performed in the second trimester when preterm contractions and spontaneous abortion are least likely.
    - When nonobstetric surgery is planned, the primary obstetric care provider should be notified. If that health care provider is not at the institution where surgery is to be performed, another obstetric care provider with privileges at that institution should be involved. If fetal monitoring is to be used, consider the following recommendations:
      - Surgery should be done at an institution with neonatal and pediatric services.
      - An obstetric care provider with cesarean delivery privileges should be readily available.
      - A qualified individual should be readily available to interpret the fetal heart rate patterns

10/13/11
Case 7

• DD is a 28 year old G3 P2002 presenting for new OB visit at 12 weeks gestation. Her last pregnancy was complicated by IUGR and smoking. She would like to quit smoking now and is interested to know more about medications to help her quit.

• A) Nicotine replacement is thought safe to use in pregnancy
• B) Varenicline is thought safe to use in pregnancy
• C) Bupropion is thought safe to use in pregnancy
• D) None of the above

Smoking during pregnancy

• Pregnancy appears to motivate women to stop smoking;
  – 46% of prepregnancy smokers quit smoking directly before or during pregnancy
  – rate of reported smoking during pregnancy has decreased from 18.4% in 1990 to 13.2% overall in 2006
• adverse effects associated smoking during pregnancy
  – include intrauterine growth restriction,
  – placenta previa,
  – abruptio placentae,
  – decreased maternal thyroid function,
  – preterm premature rupture of membranes,
  – low birth weight,
  – perinatal mortality, and
  – ectopic pregnancy.
• An estimated 5–8% of preterm deliveries, 13–19% of term deliveries of infants with low birth weight, 23–34% cases of sudden infant death syndrome (SIDS), and 5–7% of preterm-related infant deaths can be attributed to prenatal maternal smoking.
• Children born to mothers who smoke during pregnancy are at an increased risk of asthma, infantile colic, and childhood obesity.

ACOG Committee Opinion #471, November 2010
Smoking cessation during pregnancy

- Use the 5 A’s technique
  - Ask
  - Advise
  - Assist
  - Assess
  - Arrange
- Call Quitline 1-800-QUIT NOW
  - Routed to state specific line
  - Most have pregnancy specific services
- Quitting before 15 wks offers best fetal benefits
  - Quitting at any point can be beneficial
  - Quitting before 3rd trimester can prevent most of fetal weight impact
- Approximately 50–60% of women who quit smoking during pregnancy return to smoking within 1 year postpartum
  - Revisit continued abstinence in 3rd trimester & postpartum

ACOG Committee Opinion #471, November 2010

Pharmacotherapy during pregnancy

- U.S. Preventive Services Task Force: use of nicotine replacement products or other pharmaceuticals for smoking cessation aids during pregnancy and lactation have not been sufficiently evaluated to determine their efficacy or safety (15).
- Nicotine replacement therapy
  - Conflicting evidence about increasing abstinence rates in pregnant smokers,
  - It does not appear to increase the likelihood of permanent smoking cessation during postpartum follow-up of these patients
  - Trials studying the use of nicotine replacement therapy in pregnancy have been attempted,
    - all of those conducted in the United States have been stopped by data and safety monitoring committees for either demonstration of adverse pregnancy effects or failure to demonstrate effectiveness
  - The use of nicotine replacement therapy should be undertaken with close supervision and after careful consideration and discussion with the patient of the known risks of continued smoking and the possible risks of nicotine replacement therapy.
  - If nicotine replacement is used, it should be with the clear resolve of the patient to quit smoking.
- Alternative smoking cessation agents
  - Varenicline is a drug that acts on brain nicotine receptors, but there is no knowledge as to the safety of varenicline use in pregnancy
  - Bupropion is an antidepressant with only limited data,
  - No known risk of fetal anomalies or adverse pregnancy effects
  - Both of these medications have recently added product warnings mandated by the U.S. Food and Drug Administration about the risk of psychiatric symptoms and suicide associated with their use
  - Bupropion and varenicline are transmitted to breast milk. There is insufficient evidence to evaluate the safety and efficacy of these treatments in pregnancy and lactation
  - Furthermore, in a population at risk of depression, medications that can cause an increased risk of psychiatric symptoms and suicide should be used with caution and considered in consultation with experienced prescribers only.

ACOG Committee Opinion #471, November 2010
Case 8

- EB is a 31 year old G2P1001 at 11 weeks gestation. Her screening urine culture has just returned growing $10^4$ CFU/ml of Group B streptococci. She does not have any UTI symptoms. How should you proceed?
  - A) Do not treat unless $10^5$ CFU/ml
  - B) Treat GBS bacteriuria in any concentration in a pregnant woman
  - C) Treat if $10^3$ CFU/ml and symptomatic
  - D) Not a urinary pathogen but offer intrapartum prophylaxis
  - E) None of the above

Updated GBS guidelines: CDC 2010

- Although universal screening at 35–37 weeks of gestation and intrapartum antibiotic prophylaxis continue to be the basis of the prevention strategy, these new guidelines contain important changes for clinical practice, including the following:
  - Expanded recommendations on laboratory methods for identification of GBS
  - Clarification of the inoculum required for reporting GBS detected in the urine of pregnant women
  - Updated algorithms for GBS screening and intrapartum antibiotic prophylaxis for women with preterm labor or preterm premature rupture of membranes (PROM)
  - A change in the recommended dosage of penicillin-G for intrapartum antibiotic prophylaxis
  - Updated intrapartum antibiotic prophylaxis regimens for women with penicillin allergy
  - A revised algorithm for management of newborns with respect to risk of early-onset group B streptococcal disease

Verani et al. MMWR Recomm Rep 2010;59(RR–10):1–36
ACOG Committee Opinion #485 April 2011
Updated GBS guidelines: CDC 2010

Table 1. Comparison of Key Points in the 2002 and 2010 Centers for Disease Control and Prevention Guidelines for the Prevention of Perinatal Group B Streptococcal Disease

<table>
<thead>
<tr>
<th>Topic in the Guidelines</th>
<th>Key Points Unchanged From 2002</th>
<th>Key Points Changed From 2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal screening for GBS</td>
<td>Universal screening at 35–37 weeks of gestation remains the sole strategy for IAP.</td>
<td>Permissive statement for limited role of nucleic acid amplification tests for intrapartum testing for GBS</td>
</tr>
<tr>
<td>Preterm delivery</td>
<td>New and separate algorithms for preterm labor and for preterm PROM (see Fig. 1 and Fig. 2)</td>
<td></td>
</tr>
<tr>
<td>GBS specimen collection and processing</td>
<td>Rectovaginal swab specimens collected at 35–37 weeks of gestation remains the recommendation.</td>
<td>Transport options clarified Identification options expanded to include use of chromogenic media and nucleic acid amplification tests. Laboratories to report GBS in concentrations of greater than or equal to 10^4 CFU in urine culture specimens (previously, it was GBS &quot;in any concentration&quot;)</td>
</tr>
</tbody>
</table>

Verani et al. MMWR Rec Rep 2010;59(RR–10):1–36, ACOG Committee Opinion #485 April 2011

Updated GBS guidelines: CDC 2010

| Intrapartum antibiotic prophylaxis            | Penicillin remains drug of choice, with ampicillin as an alternative. Cefazolin remains the drug of choice for penicillin allergy without anaphylaxis, angioedema, respiratory distress, or urticaria. | Definition of high risk for anaphylaxis is clarified. Minor change in penicillin dose permitted Erythromycin is no longer recommended under any circumstances. D-test recommended to detect inducible resistance in isolates tested for susceptibility to clindamycin and erythromycin |
| Other obstetric management issues             | Data are not sufficient to make recommendations regarding the timing of procedures intended to facilitate progression of labor, such as amniotomy, in GBS-colonized women. Intrapartum antibiotic prophylaxis is optimal if administered at least 4 hours before delivery; therefore, such procedures should be timed accordingly, if possible. No medically necessary obstetric procedure should be delayed in order to achieve 4 hours of GBS prophylaxis before delivery. |                                                                                                      |
| Newborn management                            | Algorithm now applies to all newborns, whether or not from GBS-positive mothers. Clarification of “adequate” IAP. See full CDC guidelines for details.                                                                 |                                                                                                      |

Verani et al. MMWR Rec Rep 2010;59(RR–10):1–36, ACOG Committee Opinion #485 April 2011
Case 1

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Which antibiotic class would you consider as first line for treatment?
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Which of the following would you recommend for her prior PTB for current pregnancy?
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Case 2

• Which formulation would you recommend given the current scenario?
  A) Micronized progesterone 200 mg daily
  B) 17 alpha hydroxy progesterone caproate (250 mg/ml), 1 ml IM weekly
  C) Either
  D) Neither

Case 2

• At what EGA would you begin treatment?
  A) At first prenatal visit
  B) At 16 weeks
  C) At 24 weeks
  D) At 28 weeks
  E) At 32 weeks
Case 3

- DC is a 27 year old G1 presenting for new OB visit in the first trimester. She identifies herself as of Hispanic descent. She is wondering if she should have cystic fibrosis screening. To whom do you offer CF screening?
  - A) those of Caucasian, Northern European ethnicity
  - B) those of Hispanic ethnicity
  - C) those of African-American ethnicity
  - D) all of the above

Case 4

- Sally Starbucks is meeting you for her NOB visit. She is a 30 year old G2P0010 at 7 weeks gestation. She describes drinking 3 cups of “full caff” coffee daily. She asks about safety of caffeine intake during pregnancy. She’s worried because she’s heard it has been associated with miscarriage. How do you counsel her?
  - A) Caffeine is strongly associated with adverse pregnancy outcome including SAb and she should cut down or quit
  - B) Study outcomes are varied but moderate caffeine consumption is probably OK.
  - C) No association between caffeine intake and Sab. Keep Starbucks in business and drink as much as you want.
Case 5

- 27 year old woman G0 with irregular periods and BMI of 31 is presenting for well woman visit. She’s not using contraception and is sexually active with her husband. They would like to become pregnant. Her LMP was 10 weeks ago. You astutely perform a urine pregnancy test which is positive. Because of obesity, you would like to screen early for diabetes.
- What would be current appropriate ways to screen?
  A) 50 gram 1 hour GCT then 100 g 3 hr GTT if abnl
  B) Hemoglobin A1c
  C) Random blood glucose
  D) Any of the above

Case 6

- The same patient also reports multiple episodes of nausea, vomiting and RUQ pain after meals. GB sono confirms your suspicion of gallstones. OB sono confirms 10 week gestation. How should she be counseled about gallstones & GB surgery during pregnancy?
  A) Low carb diet
  B) Surgery should be prudently postponed till postpartum due to risk/complications from surgery
  C) Surgery should be prudently considered in the 2nd trimester
  D) Surgery should be performed now
Case 7

• DD is a 28 year old G3 P2002 presenting for new OB visit at 12 weeks gestation. Her last pregnancy was complicated by IUGR and smoking. She would like to quit smoking now and is interested to know more about medications to help her quit.
  • A) Nicotine replacement is thought safe to use in pregnancy
  • B) Varenicline is thought safe to use in pregnancy
  • C) Buproprion is thought safe to use in pregnancy
  • D) None of the above

Case 8

• EB is a 31 year old G2P1001 at 11 weeks gestation. Her screening urine culture has just returned growing $10^4$ CFU/ml of Group B streptococci. She does not have any UTI symptoms. How should you proceed?
  • A) Do not treat unless $10^5$ CFU/ml
  • B) Treat GBS bacteriuria in any concentration in a pregnant woman
  • C) Treat if $10^3$ CFU/ml and symptomatic
  • D) Not a urinary pathogen but offer intrapartum prophylaxis
  • E) None of the above