SEPSIS

December 16, 2015
Sepsis is leading cause of death of the critically ill in U.S.
Fourth leading cause or 13% of maternal deaths in U.S.
5% of maternal ICU admissions
10% of maternal deaths in low income countries
Severe Sepsis 1: 7000 pregnancies in 2008
  - Doubled from 1:15,000 in 1998

Guinn, D. Obstet Gynecol Clin N Am. 2007
Van Dillen, J. Current Opinion in Infectious Disease. 2010
Albright. C. AJOG. 2014

J. Vaught (PowerPoint presentation, September 22, 2015)
Favorable, compared to non-gravid:

- Younger age
- Fewer Co-morbidities
- Usually focused site of infection
- Antimicrobial therapy usually effective


J. Vaught (PowerPoint presentation, September 22, 2015)
Unfavorable, compared to non-gravid

- Delay in diagnosis
  - Delay in imaging
  - Delay in procedures
  - Delay in medications

Bauer, M. Anesthesia and Analgesia. 2013

J. Vaught, (PowerPoint presentation September 22 2015)
Maternal physiology augments sepsis
Advanced maternal age
Number of pregnancies
Lifestyle factors
- Ethnic minority, low socioeconomic status and primiparous
Co-mobidities
- Obesity, diabetes, and hypertension
Invasive interventions
- Cerclage, amniocentesis, and amnioreduction

(Brown & Arefeh, 2015)
NORMAL PREGNANCY CHANGES AND SIRS

- Cardiovascular: Increased HR and cardiac output
- Pulmonary: increased tidal volume, decreased PCO2
- Immunologic: increased WBC to 14,000 mm leukocytosis
  - Counts may reach 30,000 mm

Barton, J. Obstet Gynec. 2013
J. Vaught (PowerPoint presentation September 22, 2015)
TO BE COMPLETED WITHIN 3 HOURS:
1. Measure lactate level
2. Obtain blood cultures prior to administration of antibiotics
3. Administer broad spectrum antibiotics
4. Administer 30 ml/kg crystalloid for hypotension or lactate equal to or greater than 4 mmol/L

TO BE COMPLETED WITHIN 6 HOURS:
1. Apply vasopressors (for hypotension that does not respond to initial fluid resuscitation) to maintain a mean arterial pressure (MAP) of equal to or greater than 65 mm Hg
2. In the event of persistent hypotension despite fluid volume resuscitation (septic shock) or initial lactate equal to or greater than 4 mmol/L
   Focused Assessment: Vital signs, skin assessment, peripheral pulses, cap refill, and cardiopulmonary findings
   Re-measure lactate if initial lactate was elevated

Dillenger, R. Critical Care Medicine. 2013

J. Vaught, (PowerPoint presentation, September 22, 2015)

J. Vaught (PowerPoint presentation, September 22, 2015)
Clinical Chorioamnionitis

AKA: Intraamniotic infection (IAI)
Mrs. Good Teaching Moments is a 30 y/o G1P0 GA 38 weeks who presents to LDR with ROM.

Vital signs upon presentation:
T 100.9  P 113  BP 134/80  FHT 170
Definition

Acute inflammation of the membranes & chorion of the placenta

Typically a polymicrobial bacterial infection

If characteristic signs present: Clinical Chorioamnionitis
Mechanisms of Chorio

Bacteria causes an inflammatory response both in the mother and fetus

Release of proinflammatory and inhibitory cytokines & chemokines

Pg release can cause cervical ripening, membrane injury that leads to ROM, PTL and chorio

Fetal inflammatory response may lead to cerebral white matter injury
Clinical Signs & Symptoms

Maternal fever: 95-100%

Maternal tachycardia: 50-80%

Fetal tachycardia: 40-70%

Foul odor & uterine fundal tenderness: 4-25%

Treatment

Ampicillin q 6 hrs & gentamicin q 8-24 hrs.

Clindamycin or metronidazole q 8 hrs if C/S

Single iv dose after delivery

Acetaminophen

Fluid management!!!