Preeclampsia Update and Review for Home Birth Midwives

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February 25, 2013

Take Home Points to Remember

Preeclampsia is defined as the onset, after 20 weeks, of

- hypertension and
- proteinuria

- Hypertension is >140 systolic **OR** >90 diastolic on two separate occasions at least 4 hours apart.
- Proteinuria = ≥0.3 grams in a 24-hour urine specimen.

A random urine protein of 30 mg/dL or 1+ on dipstick is suggestive, needs follow up.

Symptoms of Severe Preeclampsia:

- **Symptoms of CNS dysfunction**:
  - Visual disturbance*
  - Severe headache**,
  - Altered mental status
  - Hyperreflexia
- **Symptoms of liver capsule distention**:
  - RUQ or epigastric pain,
  - Nausea
  - Vomiting
- **Hepatocellular injury**:
  - Serum transaminase concentration ≥ twice normal
- **Severe blood pressure elevation**:
  - Systolic bp ≥160 mm Hg or diastolic bp≥110 mm Hg on two occasions at least six hours apart
- **Thrombocytopenia:**
  - <100,000 platelets/microL
- **Proteinuria**
  - ≥5 grams in 24 hours
- **Oliguria**
  - <500 mL in 24 hours
- **Fetal growth restriction**
- **Pulmonary edema or cyanosis**

Risk Factors for development of PE

- Nulliparity
- Preeclampsia in a previous pregnancy
- Age >40 years (<18 years)
- Family history of preeclampsia
- *Chronic hypertension*
- *Chronic renal disease*
- Antiphospholipid antibody syndrome or inherited thrombophilia
- *Vascular or connective tissue disease (lupus)*
- *Diabetes mellitus (pregestational and gestational)*
- Multifetal gestation
- High body mass index
- Black race
- Male partner whose mother or previous partner had preeclampsia
- *Hydrops fetalis*
- Unexplained fetal growth restriction
- Woman herself was small for gestational age
- Fetal growth restriction, abruptio placentae, or fetal demise in a previous pregnancy
- Prolonged interpregnancy interval (>48-60 mos)
- Partner related factors (new partner, limted sperm exposure [eg, previous use of barrier contraception])
- Hydatidiform mole
- Susceptibility genes
- Poor diet

Theories of Causes/Pathophys of Preeclampsia

- *ABNORMAL DEVELOPMENT OF THE PLACENTA*
- *SYSTEMIC ENDOTHELIAL DYSFUNCTION*
- *IMMUNILOGIC*
- *GENETIC*
- *DIET*
- *INFLAMMATION/INFECTION*
- *INCREASED SENSITIVITY TO ANGIOTENSIN II*

Pathophysiology and Etiology, In conclusion…

- The disease process appears to begin with abnormal placentation, which leads to hypoperfusion of the placenta and release of factors that cause oxidative stress and endothelial damage.
- Other maternal factors (immunological, genetic, dietary, etc) can contribute to the above to make preeclampsia.

Diagnosis based on Signs/Symptoms:

- Systolic blood pressure ≥140 mmHg **or** diastolic blood pressure ≥90 mmHg, and
- Proteinuria ≥0.3 grams in a 24-hour urine specimen, or protein:creatinine ratio ≥0.3 mg/mg or >30 mg/mmol

Or, one or two of the above in combination with any one or more symptoms of severe preeclampsia (see above) including sudden rapid weight gain and facial edema.

Atypical Presentations of Preeclampsia (uncommon, but may be observed in 15% of patients with HELLP syndrome and some patients with eclampsia):

- **Onset of signs/symptoms at <20 weeks of gestation**: *usually associated with a complete or partial molar pregnancy*
- Hypertension **or** proteinuria (**but not both**) with or without characteristic signs and symptoms of severe preeclampsia*
- **Delayed postpartum onset** or exacerbation of disease (>2 days postpartum)

Confirming Diagnosis with Labs:

- Platelet count (<100,000/microL)
- Serum creatinine (>1.3 mg/dL)
- Elevated liver enzymes; Serum aspartate aminotransferase, AST or alanine aminotransferase, ALT. (twice the upper limit of normal)
- Severe proteinuria (≥5 grams in 24 hours)
- Hemoconcentration (high hct)
- Serum uric acid (>6 mg/dL)

Prevention for Clients with Risk Factors

- Adequate calories (approx. 2000-2500/day) and protein (80-100g daily)
- At least 50% of her diet should be high antioxidant vegetables and fruits→ an **anti-inflammatory diet**
- Consider elimination of foods that trigger inflammation such as gluten and sugar
- Supplemental calcium (1500-2000mg/day)
- Exercise at least 20 minutes 3-4 x per week
- Stress reduction activities: yoga, meditation, visualization
- Liver support herbs such as dandelion and milk thistle
- Nettles infusions to support the kidneys
- WHO recommends low-dose acetylsalicylic acid (aspirin,75 mg/day) for the prevention of pre-eclampsia in women at high risk

Management for OOH Midwives

- Consult with OB if:
  - 2 readings of BP over 140/90
  - One reading of >140/90 with +1 protein in urine
- Concurrently draw labs (cbc, renal and hepatic panels, uric acid)
- If anytime +1 or greater protein in urine, send client home with 24hr urine collection. Consult/refer if >.3 mg/dl.
- Refer immediately if high BP in combination with any of the sxs of severe preeclampsia (with or without proteinuria)

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