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January 2015

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Hypertension in Pregnancy

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Hypertension in pregnancy remains a leading cause of maternal morbidity and mortality. Unfortunately, Georgia has one of the highest rates of maternal mortality in the US. In 2011, Georgia had 47 maternal deaths resulting in a maternal mortality rate of 35.5. (Rates are per 100,00 live births.) Even more disconcerting was the 2011 death rate among non-hispanic black women - 63.8. [1] Comparatively, in 2007 (the most recent year for which statistics are available), the US had a maternal mortality rate of 12.7 for all races and 26.5 for black women.[2] In 2013, Georgia ranked number 50 in maternal mortality. Therefore improvement in management of hypertension in pregnancy may help improve mortality.

In response to recent research in in the management of hypertension in pregnancy, ACOG recently convened a task force to review data and publish evidence-based recommendations. An Executive summary of their findings was recently published in Obstetrics and Gynecology (the Green Journal).[3] The purpose of this article is to provide a limited overview of those recommendations, focusing on those that may change our current approach to the management of hypertension during pregnancy. The CDC estimates that 28.5% of women in the US over 18 have chronic hypertension [4] They also reported that younger women (18-39) were less likely than older women to be compliant with recommended treatment with only 44.5% taking their prescribed medications

The Executive summary cites two primary areas that warrant special attention. First is the need for the recognition of the multisystem nature of preeclampsia. Past attempts to establish rigid parameters for the diagnosis of preeclampsia have resulted in delays in the recognition of the presence and severity of preeclampsia. Secondly, preeclampsia is progressive and dynamic in nature. The use of the term "mild preeclampsia" is now discouraged as it only applies to the moment the diagnosis is established.

Hypertensive disorders of pregnancy remain classified into major four categories:

1. **Chronic hypertension** - Hypertension preexisting to pregnancy
2. **Preeclampsia/Eclampsia** - Hypertension with one or more associated systemic findings including:
   A. Proteinuria - >300mg/24 hours
   B. Thrombocytopenia - <100K
   C. Impaired liver function - transaminases twice the normal concentration
   D. New development of renal insufficiency (serum creatinine >1.1 mg/dl or a doubling of serum creatinine in the absence of other renal disease)

E. Pulmonary edema
F. New onset cerebral or visual disturbances

3. **Gestational hypertension** - BP elevation 20 wks in the absence of proteinuria or other systemic findings
4. **Preeclampsia superimposed on chronic hypertensions**

It is often difficult to determine when preeclampsia becomes superimposed on chronic hypertension. Because many women of childbearing age do not participate in preventative health care and have comorbidities such as diabetes and obesity, the diagnosis of chronic hypertension may not have been established prior to pregnancy. There may also be a degree of preexisting end-organ damage for which no baseline studies are available, thus making the determination of chronic vs. pregnancy related abnormalities virtually impossible.

The following represent selected highlights of the task force recommendations.

1. LOW DOSE ASPIRIN (LDA) FOR PREVENTION OF PREECLAMPSIA:

Recent data examined in a meta-analysis of more that 30,000 women indicated a small reduction in the incidence and morbidity of preeclampsia when LDA (60-80 mg daily) was used in women with a history of: 1) Early onset preeclampsia with delivery before 34 0/7 weeks or 2) Preeclampsia in two or more prior pregnancies. This therapy should be initiated late in the first trimester. LDA is not indicated in low-risk populations. The USPSTF recently suggested treatment with LDA in the setting of patients at high risk for preeclampsia defined as previous pregnancy with preeclampsia, especially early onset and with an adverse outcome; multifetal gestation; chronic hypertension; type 1 or 2 diabetes mellitus; renal disease; and autoimmune disease (antiphospholipid syndrome, systemic lupus erythematosus).5

2. ELIMINATION PROTEINURIA AS NECESSARY FOR THE DIAGNOSIS OF PREECLAMPSIA

3. ELIMINATION OF MASSIVE PROTEINURIA (>5 GRAMS) AS DIAGNOSTIC OF SEVERE PREECLAMPSIA

Recent studies indicate a poor relationship between the quantity of proteinuria and pregnancy outcomes. Preexisting comorbidities (Lupus, chronic hypertension) may contribute to rapidly rising levels of proteinuria and delivery decisions should not be based on proteinuria alone.

4. ELIMINATION OF IUGR IN THE DIAGNOSIS OF SEVERE PREECLAMPSIA

Since fetal growth restriction is managed in a similar fashion in women with or without preeclampsia, it is no longer considered indicative of severe preeclampsia.

5. TIMING OF DELIVERY

For women with gestational hypertension or preeclampsia without severe features delivery at 37 0/7 is suggested.

For women with severe features, but stable maternal and fetal status with a gestational age at 33 6/7 or less, it is suggested that delivery be deferred for 48 hours to allow administration of corticosteroids, with expectant management only in a tertiary care center. If any of the following are present, it is suggested that delivery NOT be delayed

- Uncontrollable severe hypertension
- Eclampsia

- Pulmonary edema
- Placental abruption
- DIC
- IUFD
- Pre-viable fetus

For women with HELLP syndrome and a gestational age of 34 0/7 weeks or greater, it is recommended that delivery occur soon after initial maternal stabilization.

For women with HELLP syndrome and a gestational age from viability to 33 6/7, it is suggested that delivery be delayed 24-48 hours for the administration of corticosteriods if the maternal and fetal conditions remain stable.

6. POST-PARTUM NSAID USE

When BP elevations persist past the first 24 hours postpartum, it is suggested that commonly used NSAIDs be replaced with other analgesics. NSAID use is associated with BP elevations in some patients.

Incorporating these evidence based recommendations in the management of preeclampsia may reduce maternal and fetal morbidity and mortality from this very challenging and still not well understood disease process.

This article was previously published in the Georgia Obstetrical and Gynecological Society, Inc.'s December 2014, Volume 8, Number 6 Newsletter

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[1] Source: http://oasis.state.ga.us/oasis/aosis/qryMCH.aspx
[2] US National Center for Health Statistics, Health, United States, 2010.
[3] Executive summary: hypertension in pregnancy. American College of Obstetricians and Gynecologists. Obstet Gynecol 2013; 122:1122-31
[4] Nwankwo T, Yoon SS, Burt V, Gu Q. Hypertension among adults in the United States: National Health and Nutrition Survey, 2011-2012. NCHS Brief, no 133. Hyattsville, MD: National Center for Health Statistics.2013.
[5] LeFevre ML. Low-Dose Aspirin Use for the Prevention of Morbidity and Mortality From Preeclampsia: U.S. Preventive Services Task Force Recommendation Statement. Ann Intern Med 2014.

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