

## Diagnosis, Evaluation, and Management of the Hypertensive Disorders of Pregnancy

To the Editor:

We read with great interest the recent Clinical Practice Guideline on the Diagnosis, Evaluation, and Management of the Hypertensive Disorders of Pregnancy.<sup>1</sup> This is a very important area in obstetric care and a common clinical problem that we face on a regular basis. We are wondering if the authors of the guideline would clarify the following issues that arose from our review of the guideline.

We noted that Table 2 indicates that one of the adverse conditions is elevated AST, ALT, or LDH with symptoms. There is no reference given for this statement. We are questioning the requirement that women with elevated liver enzymes who have gestational hypertension must have symptoms in order for this to be classified as an adverse condition. Specifically, how would the authors classify and manage an asymptomatic woman with elevated AST, ALT, or LDH with hypertension? In other national guidelines on hypertensive disorders in pregnancy, including those of the American College of Obstetricians and Gynecologists, hypertensive women with elevated liver enzymes are considered to have an adverse condition, and there is no reference to the need for symptoms in order to make this diagnosis.<sup>2</sup>

Table 4, Risk Factors of Preeclampsia. In the text discussion of this table it states that “risk is stratified by bolded markers”; however, there are no bolded markers within the table. We are wondering if the authors would clarify this. [See **Erratum, J Obstet Gynaecol Can 2008;30(6):465.**]

The authors recommend that women with pre-existing hypertension “be reminded to take at least 0.8 mg/day of folic acid prior to pregnancy.” The joint SOGC–Motherisk Clinical Practice Guideline, “Pre-conceptional vitamin/folic acid supplementation 2007” recommends supplementation with a multivitamin containing 0.4 to 1.0 mg of folic acid for women who are compliant and have no known health risks and a multivitamin with 5 mg of folic acid for women with health risks, including obesity, with BMI > 35 kg/m<sup>2</sup>.<sup>3</sup> This dosage (0.4 to 1.0 mg for low risk and 5 mg for high risk) is somewhat different than the current guideline of the hypertensive disorders of pregnancy (at least 0.8 mg/day). Are the authors suggesting that a dose of folic acid less than 0.8 mg/day (such as found in some

prenatal supplements) is not adequate for hypertensive women?

We would like to thank the authors for their very thorough review and recommendations for this complex yet common issue that all obstetric health care providers face.

**Joan Crane, MD, FRCSC**

**Tina Delaney, MD, FRCSC**

Maternal Fetal Medicine Division, Health Science Centre,  
St. John's NL

### REFERENCES

1. Magee LA, Helewa M, Moutquin JM, van Dadelsen P, for the Hypertension Guideline Committee. Diagnosis, evaluation, and management of the hypertensive disorders of pregnancy. SOGC Clinical Practice Guideline, No. 206, March 2008. *J Obstet Gynaecol Can* 2008;30:S1–S48.
2. ACOG Practice Bulletin. Diagnosis and management of preeclampsia and eclampsia. No. 33, January 2002.
3. Wilson RD for the Genetics Committee and Motherisk. Pre-conceptional vitamin/folic acid supplementation 2007: the use of folic acid in combination with a multivitamin supplement for the prevention of neural tube defects and other congenital anomalies. Joint SOGC–Motherisk Clinical Practice Guideline, No. 201, December 2007. *J Obstet Gynaecol Can* 2007;29:1003–13.

## In Response

To the Editor:

We thank Dr Crane and Dr Delaney for their careful reading of the recently published Clinical Practice Guidelines on the Diagnosis, Evaluation, and Management of the Hypertensive Disorders of Pregnancy.<sup>1</sup>

As pointed out, Table 2 lists the adverse maternal and fetal conditions that define preeclampsia. These include elevated AST, ALT, or LDH *with symptoms*. The addition of symptoms to elevated liver enzymes represents a change from the original guidelines published in 1997, and we agree that this warrants further explanation.

First, elevated liver enzymes are non-specific, even in women with preeclampsia who do not have recognized underlying liver disease. However, underlying macro-hepatic steatosis (related to obesity and/or metabolic syndrome) or drug-induced elevations in liver enzymes (e.g., due to labetalol) are common enough considerations to make asymptomatic, mild elevations in liver enzymes potentially unrelated to the direct end-organ complications of preeclampsia.

Second, the term, “adverse conditions” is used only by the (current and previous) Canadian guidelines in which they

are diagnostic of preeclampsia. The American guidelines use elevated liver enzymes as a factor that makes preeclampsia “highly suspect.”<sup>2</sup>

Third, our committee was aware that some practitioners may use the adverse conditions as indications for delivery in preeclampsia. Therefore, we specifically excluded hyperuricaemia (which may be more closely associated with adverse maternal and perinatal outcomes than is proteinuria) and gestational age < 34 weeks at presentation (which is associated with significantly higher maternal mortality). We felt that mildly elevated liver enzymes in the absence of symptoms would not be an indication for delivery in preeclampsia remote from term. This opinion is compatible with both widely publicized criteria for delivery in preeclampsia<sup>3</sup> and the opinions of Canadian practitioners.<sup>4</sup>

How would we diagnose and manage an asymptomatic woman with gestational hypertension and elevated liver enzymes? The whole clinical picture should be taken into account, bearing in mind that preeclampsia has many and varied manifestations that may appear serially. Such a woman should be monitored closely, and alternative diagnoses (e.g., biliary tract disease or hepatitis C) entertained.

We also thank our colleagues for highlighting the very important Joint SOGC-Motherisk Clinical Practice Guideline on pre-conceptional vitamin/folic acid supplementation<sup>5</sup>; these were published while our hypertension guidelines were in press. We fully endorse these new folic acid recommendations (0.4 mg–1.0 mg per day) as re-iterated by Dr Crane and Dr Delaney. Indeed, our advice for women to take 0.8 mg folate per day was based on the 1998 recommended dietary allowance (RDA) of 0.4 mg per day,<sup>6</sup> with the supplemental 0.4 mg per day to be used by women planning pregnancy and during the first trimester. We apologize for the lack of clarity, but believe that the intent was identical.

It is our intention to provide regular updates to these guidelines.

**Laura A. Magee, MD, FRCPC, MSc, FACP**

Corresponding author on behalf of the Hypertension Guideline Committee

## REFERENCES

1. Magee LA, Helewa M, Moutquin JM, van Daddelsen P, for the Hypertension Guideline Committee. Diagnosis, evaluation, and management of the hypertensive disorders of pregnancy. SOGC Clinical Practice Guideline, No. 206, March 2008. *J Obstet Gynaecol Can* 2008;30:S1–S48.
2. ACOG Practice Bulletin. Diagnosis and management of preeclampsia and eclampsia. No. 33, January 2002.
3. Schiff E, Friedman SA, Sibai BM. Conservative management of severe preeclampsia remote from term. *Obstet Gynecol* 1994 Oct;84(4):626–30.
4. Caetano M, Ornstein MP, von Daddelsen P, Hannah ME, Logan AG, Gruslin A, et al. A survey of Canadian practitioners regarding diagnosis and

evaluation of the hypertensive disorders of pregnancy. *Hypertens Pregnancy* 2004;23(2):197–209.

5. Wilson RD for the Genetics Committee and Motherisk. Pre-conceptional vitamin/folic acid supplementation 2007: the use of folic acid in combination with a multivitamin supplement for the prevention of neural tube defects and other congenital anomalies. Joint SOGC-Motherisk Clinical Practice Guideline, No. 201, December 2007. *J Obstet Gynaecol Can* 2007; 29:1003–13.
6. Institute of Medicine. Food and Nutrition Board. Dietary Reference Intakes: Thiamin, riboflavin, niacin, vitamin B6, folate, vitamin B12, pantothenic acid, biotin, and choline. National Academy Press: Washington, DC; 1998.

## Diagnosis, Evaluation, and Management of the Hypertensive Disorders of Pregnancy

### To the Editor:

The SOGC guidelines published in March of 2008 on diagnosis, evaluation, and management of hypertensive disorders of pregnancy state the following recommendation in the section on postpartum treatment:

“7. Non-steroidal anti-inflammatory drugs (NSAIDs) should not be given post partum if hypertension is difficult to control or if there is oliguria, an elevated creatinine (i.e., > 100 µM), or platelets < 50 × 10<sup>9</sup>/L. (III-I)”<sup>1</sup>

The recommendation is classified as III-I. The quality of evidence grade is III: opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees. The classification of recommendation is I: there is insufficient evidence (in quantity or quality) to make a recommendation; however, other factors may influence decision-making.

It is generally accepted that NSAIDs should be used cautiously in situations where there are platelet or renal function concerns. The purpose of this document is to examine the care of women with hypertensive disorders in pregnancy.

The authors refer to a paper by Makris et al., published in 2004, that summarizes six cases of hypertension with indomethacin or ibuprofen use after delivery.<sup>2</sup> Details are provided for only two cases, in only one of which the patient had preeclampsia. Neither patient had difficult-to-control hypertension, oliguria, thrombocytopenia or elevated creatinine. Although I understand that the recommendation is limited by the III-I assignment, I am at a loss as to how this recommendation can be made based on this study. The wording of the recommendation states that NSAIDs should not be used in these cases. Neither the discussion in the text of the guideline nor the citation provided supports this statement.

Would the authors be able to provide me with more information as to how this conclusion and recommendation was reached?

**M. Jocelyne Martel, MD**

Clinical Professor, Department of Obstetrics, Gynecology and Reproductive Sciences, Royal University Hospital, University of Saskatchewan, Saskatoon SK

## REFERENCES

1. Magee LA, Helewa M, Moutquin JM, van Daddszen P, for the Hypertension Guideline Committee. Diagnosis, evaluation, and management of the hypertensive disorders of pregnancy. SOGC Clinical Practice Guideline, No. 206, March 2008. *J Obstet Gynaecol Can* 2008;30:S1–S48.
2. Makris A, Thornton C, Hennessy A. Postpartum hypertension and nonsteroidal analgesia. *Am J Obstet Gynecol* 2004;190:577–8.

## In Response

**To the Editor:**

We thank Dr Martel for highlighting postpartum use of non-steroidal anti-inflammatories (NSAIDs), which we feel is an important issue to address.

For the majority of women, NSAIDs provide excellent postpartum analgesia without the side effects of narcotics.

NSAIDs have therefore become a standard component of self-administered postpartum analgesia.

Outside pregnancy, it has been well documented that NSAIDs can elevate blood pressure, cause renal dysfunction, and cause some platelet dysfunction. The magnitude of risk among postpartum women has not been quantified. However, as concerns about renal function, blood pressure, and platelet count are not uncommon among women with preeclampsia, we felt it important that all practitioners, including those with less obstetric experience (e.g., internists and residents in general), should bear in mind the potential side effects of NSAIDs.

Our recommendation (appropriately labelled III-I) was based on extrapolation from literature outside pregnancy. The small case series was quoted to provide the reader with a reference with limited discussion about these issues. As readers will understand, space is limited in such broad documents as the hypertension guidelines; therefore, we have been unable to provide full and adequate justification for every point. We welcome inquiries that give us the opportunity to provide more information.

**Laura A. Magee, MD, FRCPC, MSc, FACP**

on behalf of the SOGC Guideline Committee for the Diagnosis, Evaluation, and Management of the Hypertensive Disorders of Pregnancy