

A SURVEY ON THE MANAGEMENT OF NAUSEA AND VOMITING IN PREGNANCY BY OBSTETRICIAN/GYNECOLOGISTS

Michael L. Power, PhD, Gerald B. Holzman, MD, and Jay Schulkin, PhD



Our objective was to survey obstetrician/gynecologists concerning their management of nausea and vomiting in pregnancy. We mailed a survey on nutrition during pregnancy to the 230 ACOG Fellows who are members of the Collaborative Ambulatory Research Network and to a control sample of 800 non-Network Fellows. Results presented here are for the questions concerning prevalence and management of pregnancy-induced nausea. A total of 488 surveys (47.4% response rate) were analyzed. Respondents reported that on average, 51.4% of patients complain of nausea during pregnancy, and 9.2% complain of severe or prolonged nausea with vomiting. Respondents reported that on average, 2.4% of patients require hospitalization because of hyperemesis gravidarum. Treatments recommended by a majority of respondents for moderate nausea were eating frequent small meals (95.5%), snacking on soda crackers (88.5%), avoiding strong odors (75.6%), taking a prescribed antiemetic (71.3%), taking ginger (51.8%), and eliminating iron supplements (50%). Women physicians were more likely to recommend ginger and less likely to

prescribe an antiemetic. For severe and sustained nausea with vomiting, with additional symptoms such as dehydration or weight loss, intravenous hydration (88.7%) and antiemetics (74.0%) were the most common treatment options. Almost half (48.8%) of respondents would hospitalize such patients. We conclude that obstetrician/gynecologists appear to be knowledgeable concerning current opinion on managing nausea and vomiting of pregnancy. Improvements in the management of nausea during pregnancy are more likely to come from further research, not education of physicians. (Prim Care Update Ob/Gyns 2001;8:69-72. © 2001 Elsevier Science Inc. All rights reserved.)

Nausea and vomiting during pregnancy, or morning sickness, affect a majority of pregnant women in Western countries, with symptoms that range from mildly unpleasant to disabling.¹ Despite the colloquial name, the symptoms can and do occur at all hours of the day. Nausea during pregnancy could be considered a normal part of pregnancy. Indeed, nausea and vomiting in the first trimester of pregnancy is associated with a decreased risk of miscarriage, preterm delivery, low birth weight, stillbirth, and fetal and perinatal mortality.¹

There is a great deal of variation among women in the severity and

duration of symptoms. For many women, this nausea is transient in nature and has few long-term consequences for their pregnancy or their life, although it is undoubtedly unpleasant in the short term. Symptoms generally abate between the 14th and 17th weeks of pregnancy, although some women experience symptoms throughout pregnancy. One study on the sense of well-being during the third trimester found that 16% of women experienced nausea and 7%, vomiting.² For a significant number of women, the nausea and vomiting can become seriously disruptive to their lives. Surveys have found that as many as a quarter of pregnant women suffer sufficiently severe symptoms to cause them to change their usual activities.^{3,4} However, women suffering from severe nausea with vomiting do not appear to have different birth outcomes than women with mild nausea.⁵ For a small percentage of women, the nausea progresses to violent and sustained bouts of vomiting (hyperemesis gravidarum). These women can become dehydrated and malnourished, with serious potential consequences to them and their fetus.

Predicting which patients are likely to suffer from severe nausea and vomiting is difficult. There are no reliable indicators. Fatigue and nausea during pregnancy appear to be associated.^{1,6} Women who have previously had severe nausea dur-

From the American College of Obstetricians and Gynecologists, Washington, DC.

This research is supported by grant MCJ 117016 from the United States Department of Health and Human Services Bureau of Maternal and Child Health, Bethesda, MD.

ing pregnancy or whose mothers suffered from severe nausea during pregnancy are at greater risk.¹ Multiple gestation and molar pregnancies are also associated with increased nausea.¹ This difficulty in predicting which patients will suffer from severe or prolonged nausea requires obstetrician/gynecologists to monitor their patients conscientiously throughout pregnancy.

Unfortunately, the current state of knowledge concerning the pathophysiology of nausea and vomiting of pregnancy is underwhelming. The cause of pregnancy-induced nausea remains unknown. Thus, there currently are no scientifically based treatments that address the cause; management of the condition focuses on alleviating the symptoms. There are many suggested treatments, but none are 100% effective, and most have not been scientifically tested. We surveyed ACOG Fellows on the prevalence of pregnancy-induced nausea in their practice and their management of this condition.

Methods

Questionnaires were mailed to 230 ACOG Fellows who comprise the Collaborative Ambulatory Research Network. Questionnaires were mailed concurrently to a control group of 800 non-Network ACOG Fellows selected at random, by computer, to test whether Network Fellows' responses were statistically similar to those of ACOG Fellows in general. A second mailing was sent 6 weeks after the first to all nonrespondents. The members of the Collaborative Ambulatory Research Network are a group of obstetrician/gynecologists who voluntarily participate in questionnaire studies such as the present investigation. The Network was established to facilitate the assessment of prevailing patterns in obstetric/gynecological clinical practice and

Table 1. Demographic Data on the Survey Respondents

Group	Number of Respondents, n (%)	Age (years) ± SEM
Men*	282 (57.8) [†]	49.1 ± .6
Women*	180 (36.9) [†]	40.3 ± .5
Network Fellows [‡]	176 (36.1)	47.2 ± .7
Non-Network Fellows [‡]	312 (63.9)	44.7 ± .6

* Male respondents significantly older than female respondents, $P < .001$.

[†] Twenty six (5.3%) declined to state their gender.

[‡] Network Fellows were significantly older than non-Network Fellows, $P = .006$.

to help inform ACOG in the development of professional education where needed.

The questionnaire contained questions pertaining to nutrition during pregnancy. We report here the results from the questions concerning nausea during pregnancy. Data concerning other questions from this survey were previously reported.⁷

Data were analyzed using a personal computer-based software package (SPSS 8.0; SPSS Inc., Chicago, IL). Descriptive statistics were computed for the demographic measures used in the analyses, which are reported as mean ± SEM. Two-tailed t tests were used to compare group means of age. Group differences in responses on continuous measures were assessed using analysis of covariance, with Network status and sex as categorical variables and age as the covariate. Differences on categorical measures were assessed using chi-square. Group differences on ordinal measures were assessed using the Kruskal-Wallis test and the Mann-Whitney U test. All analyses were tested for significance using an alpha of .05.

Results

As previously reported,⁷ a total of 584 surveys were returned, producing a response rate of 56.7%. However, 96 of these were excluded because the respondents did not provide obstetric services. This left 488 surveys (47.4% response rate)

to be analyzed, composed of 176 from Collaborative Ambulatory Research Network Fellows (76.5% response rate) and 312 from other ACOG Fellows (39.0% response rate). Basic demographic data for the respondents are presented in Table 1.

Respondents reported that on average, $51.4 \pm 1.2\%$ of their patients will complain of nausea during pregnancy (median = 50%, range, 1%–100%). The respondents reported that on average, $9.2\% \pm 4\%$ of their patients will complain of severe or prolonged nausea with vomiting (median = 7%, range, .5%–80%), and $2.4\% \pm 1.7\%$ of their patients require hospitalization because of hyperemesis gravidarum (median = 1.5%, range, 0%–50%).

Respondents were asked to select from a list of possible treatments for a patient with moderate to severe nausea with occasional vomiting. A summary of their responses is provided in Table 2. There were five treatments that were recommended by a majority of respondents: eating frequent small meals (95.5%), snacking on soda crackers (88.5%), avoiding strong odors (75.6%), taking a prescribed antiemetic (71.3%), taking ginger (51.8%), and eliminating iron supplements from the diet (50%). Virtually no respondents stated that they were unlikely to recommend any treatment (0.6%). Women physicians were more likely than their male counterparts to recommend ginger (63.4% as opposed to 43.8%, $P < .001$) and

Table 2. Respondents' Recommendations for a Pregnant Patient Who Complains of Moderate-to-Severe Nausea With Occasional Vomiting

Recommendation	All Respondents		
	(%)	Men (%)	Women (%)
Eating frequent small meals	97.5	96.8	98.4
Snacking on soda crackers	88.5	87.7	89.7
Avoiding strong odors	76.0	75.7	76.8
Taking a prescribed antiemetic*	71.3	74.3	66.5
Taking ginger (e.g., ginger ale, ginger tea) [†]	51.8	43.8	63.4
Eliminating iron supplements from the diet	50.4	52.7	47.4
Eliminating high-fat foods from the diet	45.5	44.9	46.9
Recumbent resting whenever tired or nauseous	28.5	30.8	24.7
Drinking herbal teas [‡]	21.7	17.8	27.8
Other [§]	17.2	14.0	22.2
Psychological counseling [¶]	13.1	15.4	9.8
I am unlikely to recommend any treatment	0.6	0.7	0.5

* Men more likely to recommend than women, $P = .026$.

[†] Women more likely to recommend than men, $P < .001$.

[‡] Women more likely to recommend than men, $P = .029$.

[§] Women more likely to recommend than men, $P = .024$.

[¶] Men tended to be more likely to recommend than women, $P = .064$; older women more likely to recommend than younger women, $P = .001$.

herbal teas (27.8% as opposed to 17.8%, $P = .029$) and less likely to prescribe an antiemetic (66.5% as opposed to 74.3%, $P = .026$). Women were also more likely to choose the category "other" and to list a treatment not among the given selections (22.2% as opposed to 14.0%, $P = .024$). The most common responses given for "other" were vitamin B₆ and acupressure wrist bands.

Respondents were asked to describe briefly their most likely course of treatment for a patient with severe nausea and vomiting and other clinical manifestations of hyperemesis gravidarum, such as dehydration, lack of weight gain, or signs of nutritional deficiencies. Intravenous hydration (88.7%) and antiemetics, either IV or suppositories (74.0%), were the most common treatment options. Almost half (48.8%) of respondents would hospitalize such patients.

Discussion

Although measuring the prevalence of a medical condition through physician recall is fraught with uncer-

tainty, the perceptions of the obstetrician/gynecologists responding to this survey are consistent with previously reported data on the prevalence of nausea of pregnancy. According to the respondents, almost 1 in 10 pregnant women will suffer from severe nausea with vomiting, and more than 1 in 50 will have to be hospitalized. Severe nausea with prolonged and sustained vomiting can have serious detrimental effects for both mother and fetus.^{1,8} For example, thiamin deficiency is important to guard against because the administration of dextrose solutions before repletion of thiamin stores can lead to Wernicke's encephalopathy.⁸⁻¹¹

The responding physicians appear to be well informed on current opinion on management of nausea and vomiting during pregnancy, including the use of alternative therapies. There was generally broad agreement concerning the management of both moderate and severe cases of pregnancy-induced nausea among the respondents that corresponded well with current reviews of the literature.^{1,8,12,13} The fact that over 70% of responding physicians

would prescribe an antiemetic for even moderate cases suggests that obstetrician/gynecologists are willing to treat this condition aggressively. This is significant considering that a majority of pregnant women are likely to believe that taking an antiemetic increases the teratogenic risk to their fetus.¹⁴

The accepted options available to the clinician for the management of nausea and vomiting of pregnancy, however, may not inspire tremendous confidence among patients suffering from nausea and vomiting of sufficient intensity to disrupt their lives. The lack of understanding regarding the pathophysiology of this condition significantly hampers clinical management. There is a need for further research, both on the cause and treatment of nausea and vomiting during pregnancy. At this time, improvement in the management of this condition may be more likely to depend on the efforts of researchers rather than educators.

References

1. Broussard CN, Richter JE. Nausea and vomiting of pregnancy. *Gastroenterol Clin North Am* 1998;27:123-51.
2. Knudsen A, Lebech M, Hansen M. Upper gastrointestinal symptoms in the third trimester of the normal pregnancy. *Eur J Obstet Gynecol Reprod Biol* 1995;60:29-33.
3. O'Brien B, Naber S. Nausea and vomiting during pregnancy: effects on the quality of women's lives. *Birth* 1992;19:138-43.
4. Vellacott ID, Cooke EJ, James CE. Nausea and vomiting during pregnancy. *Int J Gynaecol Obstet* 1988;27:57-62.
5. Tsang IS, Katz VL, Wells SD. Maternal and fetal outcomes in hyperemesis gravidarum. *Int J Obstet Gynecol* 1996;55:231-5.
6. van Lier D, Manteuffel B, Dilorio C, Stalcup M. Nausea and fatigue during early pregnancy. *Birth* 1993;20:193-7.
7. Power ML, Holzman GB, Schulkin J. Knowledge and clinical practice re-

- garding folic acid among obstetrician-gynecologists. *Obstet Gynecol* 2000;95:895–8.
8. Nelson-Piercy C. Treatment of nausea and vomiting in pregnancy: when should it be treated and what can safely be taken? *Drug Saf* 1998; 19:155–64.
 9. Selvaraj S. Wernicke's encephalopathy as a complication of hyperemesis gravidarum. *J Obstet Gynaecol* 1997;17:365.
 10. Tesfaye S, Achari V, Yang YC, Harding S, Bowden A, Vora JP. Pregnant, vomiting, and going blind. *Lancet* 1998;352:1594.
 11. Hillbom M, Pyhtinen J, Pylvänen V, Sotaniemi K. Pregnant, vomiting, and coma. *Lancet* 1999;353:1584.
 12. Murphy PA. Alternative therapies for nausea and vomiting of pregnancy. *Obstet Gynecol* 1998;91: 149–55.
 13. Society of Obstetricians and Gynecologists of Canada. Committee opinion: Guidelines for the management of nausea and vomiting in pregnancy. *J SOGC* 1996;18:255–7.
 14. Mazzotta P, Magee LA, Maltepe C, Lifshitz A, Navioz Y, Koren G. The perception of teratogenic risk by women with nausea and vomiting of pregnancy. *Reprod Toxicol* 1999; 13:313–9.

Address correspondence and reprint requests to Michael L. Power, PhD, Department of Research, American College of Obstetricians and Gynecologists, 409 12th Street, SW, Washington, DC 20024.