

Breathing for two: Now we can all breathe a little easier

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In 1993, the National Asthma Education and Prevention Program (NAEPP) Working Group on Asthma and Pregnancy released its report, "The management of asthma during Pregnancy."¹ This report reviewed the information available regarding the interrelationships between asthma and pregnancy and provided consensus management recommendations for the management of asthma during pregnancy from a multidisciplinary expert panel. In the more than 10 years since the publication of that report, much new information regarding asthma and pregnancy has emerged.

First, specific prevalence data have now suggested that asthma is more common in pregnant women in this country than previously thought, affecting 3.8% to 8.4% of this population.² Moreover, the prevalence of asthma during pregnancy appears to be increasing.²

Second, several reports have shed light on the possible effects of pregnancy on the course of asthma. A meta-analysis of the available data through 1997 supported the often-quoted generalization that asthma during pregnancy improves in one third of women, worsens in one third, and remains the same in one third.³ However, a recent critical review aptly pointed out that most of the available studies did not use objective measures of asthma severity.⁴ A recent large cohort study that did measure severity on the basis of the NAEPP criteria did find that asthma severity increased in 30% of women and decreased in 23% of women from the beginning to the end of pregnancy.⁵ This study also confirmed the usefulness of the NAEPP asthma severity classification during pregnancy by showing that gestational asthma morbidity was directly related to the initial asthma severity classification. Exacerbations requiring hospitalizations, unscheduled medical visits, or oral steroids, as well as symptoms during labor and delivery, were significantly more common in women with initially

Abbreviation used

NAEPP: National Asthma Education and Prevention Program

persistent versus intermittent asthma and more common in women whose asthma was initially classified as severe persistent compared with those whose asthma was classified as mild-moderate persistent.⁵

Third, a number of studies in the past 10 years have addressed the question of whether maternal asthma increases the risk of adverse perinatal outcomes. Several large database or registry studies have described the increased risks of perinatal mortality, preeclampsia, cesarean section, preterm birth, and low birth weight in the pregnancies of asthmatic versus nonasthmatic women.⁶⁻⁹ However, several relatively large prospective clinical cohort studies in which asthma was actively managed during pregnancy did not confirm these increased risks,¹⁰⁻¹² suggesting that successful asthma management might reduce adverse perinatal outcomes. Supporting these findings are studies that have shown a relationship between increased asthma symptoms¹³ or lower pulmonary function¹⁴ and reduced fetal growth. In addition, a recent study suggests that patients with daily asthma symptoms are at increased risk of preeclampsia, while patients with less frequent symptoms are not.¹⁵

A fourth subject of study over the past decade has been the safety of asthma medications during pregnancy. Several studies have provided reassuring information regarding the safety of inhaled short-acting β -agonists and inhaled corticosteroids during pregnancy,^{13,16-18} especially for budesonide.^{19,20} In addition, 2 studies have shown that inhaled corticosteroids prevent acute asthma exacerbations during pregnancy.^{11,21} However, recent studies have not been as reassuring for oral corticosteroids regarding preeclampsia,¹⁶ prematurity,^{13,17,22} and oral clefts.²² Finally, a recent study and survey confirm what many observers have long suspected: asthma is often undertreated by both providers²³ and patients²⁴ during pregnancy, presumably at least in part because of the fear of the adverse fetal effects of maternal medications.

Against this backdrop of newer information, the updated evidence-based management guidelines for the treat-

From the Department of Allergy, Kaiser Permanente Medical Center.

Received for publication September 9, 2004; revised September 9, 2004; accepted for publication September 14, 2004.

Available online November 11, 2004.

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J Allergy Clin Immunol 2005;115:31-3.

0091-6749/\$30.00

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doi:10.1016/j.jaci.2004.09.013

ment of asthma during pregnancy summarized in this issue of the Journal²⁵ are welcome. It is of interest to compare these guidelines with both the 1993 guidelines and the most recent general NAEPP asthma guidelines. In addition to using an updated severity classification system and addressing the use of some newer medications, the main difference from the 1993 report is that inhaled steroids are now recommended as the preferred treatment for all levels of persistent asthma, with cromolyn relegated to alternative status for mild persistent asthma. There are 2 main differences between these guidelines and the 2002 NAEPP update.²⁶ First, medium-dose inhaled corticosteroids and combined low-dose inhaled corticosteroids with an inhaled long-acting β_2 -agonist are considered equal preferred choices for the initial management of moderate persistent asthma. These 2 options were considered coequal primarily because much more gestational safety data were available for inhaled corticosteroids than for inhaled long-acting β_2 -agonists, although the data for short-acting β_2 -agonists were reassuring.²⁵ Second, 3 specific drugs are recommended for gestational asthma management. Budesonide is recommended as the inhaled corticosteroid of choice because of the availability of so much more reassuring data for this drug specifically. Albuterol is recommended as the preferred short-acting β_2 -agonist also because of more published data. Finally, salmeterol is recommended as the inhaled long-acting β_2 -agonist of choice because of longer availability in this country. Because the budesonide recommendation is based on reassuring data for that drug rather than on data suggesting that other inhaled steroids are unsafe, the report does suggest that patients whose symptoms are well controlled with an alternative inhaled corticosteroid before pregnancy could continue that drug during pregnancy. Theophylline and leukotriene antagonists are considered alternative but not preferred choices for mild persistent asthma or as alternative add-on therapy to inhaled corticosteroids. The information regarding oral corticosteroids described above and reviewed in the evidence-based report has 2 clinical implications. It does give additional impetus to managing gestational asthma in a way so as to prevent the need for oral corticosteroids. However, if oral corticosteroids are indicated for the treatment of severe asthma during pregnancy, their potential risks are still less than the possible risks of severe uncontrolled asthma, which include maternal death, fetal death, or both.²⁷ The 2004 report only briefly alludes to nonpharmacologic aspects of asthma management because reviewing those aspects of management was not its purpose. However, these guidelines do point out that careful and objective follow-up, identification and reduction of asthma triggers, and patient self-management education are important aspects of gestational asthma management.²⁵

Like all good evidence-based reports, this report identifies important gaps in knowledge where more information is needed. More gestational data are needed for inhaled long-acting β_2 -agonists, inhaled corticosteroids other than budesonide, leukotriene antagonists, and

omalizumab. The American Academy of Allergy Asthma and Immunology is currently working with academic experts, the US Food and Drug Administration, and the pharmaceutical industry to establish a national comprehensive surveillance system to obtain this type of information. Such a system would not only provide more data on currently used asthma and allergy medications but would also provide timely information on newly released medications that will be used in women of child-bearing age.

Although more data are certainly desirable, the new evidence-based report should be very useful to those responsible for the care of pregnant women with asthma. Specific and easily applied guidelines are presented for the pharmacologic management of gestational asthma on the basis of severity classification and the achievement of disease control. The release of such guidelines, on the basis of the best published evidence, should be reassuring to patients as well. With the availability of these guidelines, both pregnant patients with asthma and their providers should breathe a bit easier.

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