

Managing Asthma During Pregnancy

Uncontrolled maternal asthma increases the risk of perinatal mortality, preeclampsia, preterm birth, and low birth weight infants; the magnitude of risk is related to the severity of the maternal asthma. Nevertheless, most pregnant women with asthma can successfully control their asthma and have a healthy baby. Proper control of asthma should allow a woman with asthma to maintain a normal pregnancy with little or no increased risk to herself or her fetus.

General Principles

- The treatment goal for the pregnant asthma patient is to provide optimal therapy to maintain control of asthma for maternal health and quality of life as well as for normal fetal maturation throughout gestation.

Asthma control is defined as:

- Minimal or no chronic symptoms day or night
 - Minimal or no exacerbations
 - No limitations with activities; no school nor work missed
 - Maintenance of (near) normal pulmonary function
 - Minimal use of short-acting inhaled beta2-agonist
 - Minimal or no adverse effects from medications
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- Asthma is highly variable. Specific therapy should be tailored to the needs and circumstances of individual patients. A general stepwise approach to therapy is recommended in which the number and dose of medications used are increased as necessary and decreased when possible, based on the severity of the patient's asthma.
 - Pharmacologic therapy should be accompanied at every step of severity by patient education and measures to control those factors that contribute to the severity of the asthma.
 - Asthma care should be integrated with obstetrics care. The obstetrical care provider should be involved in asthma care and should obtain information on asthma status during prenatal visits. Information should include day and nighttime symptoms, peak flow measures or spirometry reading, and medication usage. Consultation or co-management with an asthma specialist is appropriate, as indicated, for evaluation of the role of allergy and irritants, complete pulmonary function studies, or evaluation of the medication plan if there are complications in achieving the goals of therapy or the patient has severe asthma. A team approach is helpful if more than one clinician is managing the asthma and the pregnancy.

Four Components of Asthma Management

Recommendations for the treatment of asthma are organized around **four components** of effective asthma management: **assessment and monitoring of asthma**, including objective measures of pulmonary function; **control of factors contributing to asthma severity**; **patient education for a partnership in asthma care**; and **pharmacologic therapy using a stepwise approach**.

Patients who have persistent asthma should be evaluated at least monthly during pregnancy. A major reason for this frequency of monitoring is that the course of asthma changes in approximately two-thirds of women during pregnancy (Schatz et al. 2003). Evaluation should include a history (symptom frequency, nocturnal asthma, interference with activities, exacerbations, and medication use), lung auscultation, and pulmonary function.

The dyspnea in pregnancy may seem similar to the dyspnea experienced during asthma exacerbations, but the dyspnea of pregnancy is not associated with the chest tightness, wheezing, and airway obstruction characteristic of asthma.

Spirometry tests are recommended at the time of the initial assessment. For routine monitoring at most subsequent follow-up outpatient visits, spirometry is preferable. Patients with FEV1 of 60–80 percent predicted are at increased risk of subsequent asthma morbidity during pregnancy, and patients with FEV1 of less than 60 percent predicted are at even greater risk (Schatz et al. 2003).

Daily peak flow monitoring should be considered for patients with moderate to severe asthma, and especially for patients who have difficulty perceiving signs of worsening asthma. The evidence is not sufficient to conclude that peak flow monitoring is any more effective than symptom monitoring, but adequate studies in patients with moderate to severe asthma have not been conducted. For these patients, peak flow monitoring may be a valuable tool for home monitoring of asthma and communicating asthma status to the clinician (EPR—Update 2002). Because FEV1 and PEF do not change appreciably due to pregnancy, PEF may still be a useful monitoring tool for pregnant women with asthma.

Women who have persistent asthma during pregnancy also may benefit from additional fetal surveillance in the form of ultrasound examinations and antenatal fetal testing. Because asthma has been associated with IUGR and preterm birth, it is useful to establish pregnancy dating accurately by first trimester ultrasound where possible. The intensity of antenatal surveillance of fetal well-being should be considered on the basis of the severity of the asthma as well as any other high-risk features of the pregnancy that may be present. All patients should be instructed to be attentive to fetal activity.

Avoidance of Factors Contributing to Asthma Severity

Identifying and avoiding factors that can contribute to asthma severity (“asthma triggers”) can lead to improved maternal well-being with less need for medications. In previously untested patients, either prick skin tests or in vitro (radioallergosorbent test [RAST] or enzyme-linked immunosorbent assay [ELISA]) tests may be performed to identify relevant allergens (e.g., mites, animal dander, mold, cockroaches) for which specific environmental control instructions can be given (EPR-2 1997). If the patient is using allergen immunotherapy for the control of allergies, it can be continued during pregnancy. However, benefit-risk considerations do not generally favor beginning immunotherapy during pregnancy because the initiation of immunotherapy can be associated with anaphylaxis, which can be fatal to the mother and fetus (Asthma and Pregnancy Report 1993).

Smokers must be encouraged to discontinue smoking, and all patients should try to avoid, as much as possible, exposure to environmental tobacco smoke and other potential irritants. Morbidity during pregnancy due to smoking may be independent of and additive to morbidity due to asthma (Schatz et al. 1990). Furthermore, maternal smoking may be associated with increased risk for wheezing and development of asthma in her child (Arshad and Hide 1992; Martinez et al. 1995).

The Quick List

- Monitor the level of asthma control and lung function during prenatal visits. The course of asthma improves in one-third of women and worsens for one-third of women during pregnancy.
- Monthly evaluations of asthma will allow the opportunity to step up therapy if necessary and to step down therapy if possible.
- Albuterol is the preferred Bronchodilator [Short Acting Beta 2 Agonist (SABA)]. The most data related to safety during human pregnancy are available for albuterol.
- Inhaled Corticosteroids (ICSs) are the preferred long-term control medication. Budesonide (Pulmicort) is the preferred ICS because more data are available on using budesonide in pregnant women than are available on other ICSs, and the data are reassuring. However, no data indicate that the other ICS preparations are unsafe during pregnancy.