9 Pregnancy, Lactation, and Asthma

ARIF M. SEYAL, MD

Contents

Introduction
Changes in Maternal Respiratory System Physiology During Pregnancy
Changes in Maternal Cardiovascular Physiology and Fetal Oxygenation
InterRelationship Between Asthma and Pregnancy
Diagnosis of Asthma During Pregnancy
Management of Asthma During Pregnancy and Lactation
Objective Measures for Assessment and Monitoring
Immunotherapy
Pharmacologic Therapy
Management of Acute Exacerbation of Asthma During Pregnancy
Management of Asthma During Labor and Delivery
Obstetric Management
Patient Education
Breastfeeding
Conclusion

Key points

- Course of Asthma during pregnancy is variable, it may improve, worsen, or remain unchanged.
- In general, women with severe asthma prior to pregnancy are more likely to experience worsening of their symptoms during pregnancy.
- Optimal control of asthma during pregnancy improves perinatal outcomes.
- In addition to asthma, several other conditions, i.e. hyperventilation of pregnancy, peripartum cardiomyopathy, pulmonary edema because of tocolytic therapy and amniotic fluid embolism should be considered in differential diagnosis when evaluating a gravida with symptoms of dyspnea.

From: Bronchial Asthma: Principles of Diagnosis and Treatment, 4th ed.
M. E. Gershwin and T. E. Albertson, eds. © Humana Press, Totowa, NJ

233
• Diagnosis of asthma can be confirmed by the demonstration of reversible airway obstruction by pulmonary function test.
• Methacholine challenge test and skin testing should be deferred until after childbirth.
• Avoidance of trigger factors and discontinuation of smoking are particularly beneficial during pregnancy because better control of asthma symptoms can be achieved while reducing the reliance on pharmacotherapy.
• Pharmacological management of bronchial asthma during pregnancy is not substantially different from the asthma management in nonpregnant patients.
• When indicated, systemic corticosteroids should be used for the treatment of severe asthma during pregnancy.
• While ongoing immunotherapy can be continued at a reduced dosage schedule, it should not be initiated during pregnancy.
• Open communication between the patient and her physician will improve patient understanding of asthma care plan and overall outcome.

Introduction

Bronchial asthma is among the most common chronic respiratory illness to complicate pregnancy. It is estimated that approx 4% of pregnancies may be effected by asthma (1). Clinically, asthma may manifest itself as a wide spectrum of disorders, ranging from infrequent, intermittent wheezing to chronic severe asthma causing substantial disability. Uncontrolled asthma is associated with a variety of maternal and fetal complications. A pregnant mother with asthma presents a unique challenge for the medical consultant, in that, at any given time, both mother and fetus are involved. Status of asthma symptoms control, maternal oxygenation, and therapy effect both parties. When asthma is treated in mother, there is a salutary effect on the fetal environment as well. Undertreatment of asthma during pregnancy is a major problem, because of an unsubstantiated fear of fetal effects from maternal pharmacological therapy of asthma. The report of the Working Group on Asthma and Pregnancy (1) emphasizes that proper control of asthma during pregnancy will improve maternal health and fetal well being, and significantly diminish perinatal morbidity and mortality.

Changes in the Maternal Respiratory System Physiology During Pregnancy

Changes in the maternal respiratory and cardiovascular systems during pregnancy influence fetal oxygenation and acid–base status. There is an increase in minute ventilation up to approx 50% in late pregnancy, compared with a nonpregnant state (2), which is believed to result from to progesterone-induced stimulation of respiratory drive and an increase in the tidal volume (Vt) (3,4). These changes are responsible for alveolar hyperventilation and hypocapnea, with an arterial carbon