Prostaglandins to Induce Labor in Women with Asthma

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Clinical Inquiries provides answers to questions submitted by practicing family physicians to the Family Physicians Inquiries Network (FPIN). Members of the network select questions based on their relevance to family medicine. Answers are drawn from an approved set of evidence-based resources and undergo peer review. The strength of recommendations and the level of evidence for individual studies are rated using criteria developed by the Evidence-Based Medicine Working Group (http://www.cebm.net/?o=1025). The complete database of evidence-based questions and answers is copyrighted by FPIN. If interested in submitting questions or writing answers for this series, go to http://www.fpin.org or e-mail: questions@fpin.org.

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Clinical Question
Does the use of prostaglandins to induce labor increase the risk of maternal bronchospasm in patients with asthma?

Evidence-Based Answer
There is little evidence evaluating whether prostaglandins used to induce labor increase the risk of bronchospasm in patients with asthma. The use of dinoprostone to induce labor is not associated with asthma exacerbations or reduced oxygen saturation in patients with active asthma or a history of asthma. (Strength of Recommendation: C, based on a retrospective cohort study.)

Evidence Summary
Approximately 4% to 8% of pregnancies are complicated by asthma, and prostaglandins are often used to induce labor (225 cases per 1,000 live births).1,2 However, there are no prospective studies evaluating the use of prostaglandins in pregnant women with asthma.

A small 12-year retrospective cohort study (n = 189) found no change in asthma symptoms in pregnant patients with active asthma or a history of asthma who received dinoprostone for labor induction.3 There was no increase in the primary outcomes of clinical asthma exacerbation (described as any respiratory symptoms or the need for new bronchodilator medications), and no decrease in pulse oximetry measurements after prostaglandin exposure. An older study on the intravenous use of dinoprostone for pregnancy termination found an uncommon paradoxical increase in airway resistance with nonobstetric dosing.4 No studies have evaluated whether there is an association between bronchospasm and the use of misoprostol for induction of labor.

Recommendations from Others
Consensus recommendations from the National Asthma Education and Prevention Program support the use of misoprostol and dinoprostone for cervical ripening in pregnancy and for the management of postpartum hemorrhage.5 They warn that methylergonovine and carboprost may cause bronchospasm. The package insert for dinoprostone recommends caution when used in patients with a history of childhood asthma, even if there have not been exacerbations during adulthood. The package insert for misoprostol lists bronchospasm as an uncommon adverse event.

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REFERENCES