



An Evidence-Based Update on Obstetric Anesthesia

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Keywords

- Obstetric anesthesia • Labor analgesia • Cesarean anesthesia
- Obstetric complications

Key points

- Anesthesiologists should participate in developing policies specific to labor and delivery.
- Combined spinal–epidural and epidural analgesia have similar efficacy, risks, and adverse associations but do not affect outcome of labor.
- Although fluid therapy does not affect incidence of hypotension after neuraxial block for cesarean delivery, maternal blood pressure should be kept at baseline.
- General anesthesia should not be avoided when urgency, maternal condition, or patient preference make it the preferable technique.
- The massive transfusion protocol for postpartum hemorrhage should include use of recombinant factor VIIa and cell salvage blood; amniotic fluid embolism syndrome may require different management strategies.

INTRODUCTION

The practice of clinical medicine is dynamic, changing in response to many factors including new research that shows physicians' ways to achieve better patient outcomes. Research and clinical experience continue to shape the way anesthesiologists care for obstetric patients. Out of translational research and clinical practice come evidence-based guidelines for obstetric anesthesia, as for all the anesthetic subspecialties. This discussion focuses on areas where obstetric anesthesia is evolving and clinical management may still be controversial.

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GUIDELINES AND POLICIES ON LABOR AND DELIVERY

Laboratory testing

In general, parturients are healthy young women without significant underlying medical conditions. If that is the case, what laboratory tests are required before placement of a neuraxial block for analgesia or anesthesia? Is a platelet count always necessary to rule out gestational thrombocytopenia? The American Society of Anesthesiologists (ASA) Practice Guidelines for Obstetric Anesthesia state that anesthesiologists should, “Order or require a platelet count based on a patient’s history, physical examination, and clinical signs; a routine intrapartum platelet count is not necessary in the healthy parturient” [1]. Pre-eclampsia can be associated with abnormal laboratory studies, but what is the actual frequency of laboratory abnormalities? A review of 2752 women with pregnancy-associated hypertension found laboratory abnormalities occurred in 7.3%, but the incidence differed depending on severity of hypertension [2]. Abnormalities occurred in 4.9% of women with mild hypertension, 8.9% of those with severe hypertension alone (persistent blood pressure $\geq 160/110$ mm Hg), and 12.2% of hypertensive patients if they also had signs of end-organ dysfunction, such as headache, epigastric pain, blurred vision, pulmonary edema, eclampsia, or oliguria. It may not be necessary or cost effective to test women with mild hypertension and no signs of end-organ dysfunction, because 95% of their testing is within the range of normal.

The ASA Practice Guidelines contain recommendations for blood availability for parturients that state, “Order or require an intrapartum blood type and screen or cross-match based on maternal history, anticipated hemorrhagic complications (eg, placenta accreta in a patient with placenta previa and previous uterine surgery), and local institutional policies; a routine blood cross-match is not necessary for healthy and uncomplicated pregnancies” [1]. In general, a healthy laboring parturient without risk factors does not need cross-matched blood available or any routine laboratory work.

Prevention of infection

When neuraxial blocks are performed, infection prevention is a primary consideration. Meningitis and epidural abscess are devastating complications. Both the ASA [3] and the American Society of Regional Anesthesia [4] have published guidelines that outline steps to minimize the risk of infection associated with spinal and epidural anesthetics. Both recommend using chlorhexidine–alcohol solutions for sterile preparation of the skin rather than povidone-iodine with alcohol or povidone-iodine alone (Betadine). The American Society of Regional Anesthesia guidelines state that “Alcohol-based chlorhexidine antiseptic solutions significantly reduce the likelihood of catheter and site colonization and maximize the rapidity and potency of bactericidal activity when compared to other solutions. Therefore, alcohol-based chlorhexidine solutions should be considered the antiseptic of choice before regional anesthetic techniques (Grade A)” [4].

However, the applicator package label says it should not be used for lumbar puncture or in contact with meningeal structures. Should anesthesiologists be

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