Cochrane for Clinicians

Putting Evidence into Practice

Active vs. Expectant Management in the Third Stage of Labor

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Clinical Question

Does active management of the third stage of labor reduce severe primary postpartum hemorrhage or improve other outcomes?

Evidence-Based Answer

Very low-quality evidence suggests that active management of the third stage of labor reduces the risk of severe primary postpartum hemorrhage greater than 1,000 mL (number needed to treat [NNT] = 66; 95% CI, 44 to 127). Low-quality evidence suggests that active management may reduce the incidence of maternal anemia (NNT = 28; 95% CI, 17 to 73). Potential harms of postnatal hypertension, pain, and readmission to the hospital because of bleeding have been identified.[1] (Strength of Recommendation: B, Cochrane review without clear recommendation, based on low- to very low-quality evidence, with a small number of studies with relatively small numbers of participants.)

Practice Pointers

Postpartum hemorrhage, defined by the American College of Obstetricians and Gynecologists (ACOG) as "cumulative blood loss of ≥ 1,000 mL or blood loss accompanied by signs/symptoms of hypovolemia within 24 hours following the birth process,"[2] is a common complication of pregnancy, affecting 3% to 5% of patients,[3] and remains a leading cause of maternal death in the United States. From 2008 to 2017, hemorrhage caused 13.1% of pregnancy-related deaths.[4] Developed as a strategy to prevent postpartum hemorrhage, active management of the third stage of labor includes the administration of a prophylactic uterotonic, early cord clamping, and cord traction with counterpressure on the uterus to deliver the placenta.[5] In expectant management of the third stage of labor, the placenta is delivered spontaneously following the usual signs of placental separation. The authors of this Cochrane review compared the effects of active management vs. expectant management and the effects of mixed management (using one or two of the techniques above) vs. expectant management on postpartum hemorrhage and other maternal and neonatal outcomes.

This Cochrane review included eight randomized trials involving 8,892 women.[1] Four studies compared active vs. expectant management, and four compared active vs. mixed management, including variations of timing of uterotonics, cord clamping, and controlled cord traction. The studies were all conducted in hospitals, seven in World Bank–defined higher-income countries, and one in a lower-income country.

Low-quality evidence suggests that, when compared with expectant management, active management of the third stage of labor reduces the incidence of severe postpartum hemorrhage, defined by the authors and the World Health Organization as estimated or measured blood loss of 1,000 mL or more (relative risk [RR] = 0.3; 95% CI, 0.1 to 0.9; three studies; n = 4,635; NNT = 66; 95% CI, 44 to 127). Active management may reduce maternal anemia after birth, defined as a maternal hemoglobin level of less than 9 g per dL (90 g per L) at 24 to 72 hours postpartum (RR = 0.5; 95% CI, 0.3 to 0.8; NNT = 28; 95% CI, 17 to 73); two studies; n = 1,572). Active management of the third stage makes no difference in the number of infants admitted to neonatal units, and very low-quality evidence demonstrates that active management does not reduce or increase the number of newborns with jaundice requiring treatment (RR = 1.0; 95% CI, 0.6 to 1.7; two studies; n = 3,142). There were no data on whether active management reduces very severe postpartum hemorrhage at the time of birth (more

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This series is coordinated by Corey D. Fogleman, MD, assistant medical editor.

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than 2,500 mL), decreases maternal mortality, or changes the rate of neonatal polycythemia requiring treatment.

Potential harms of active management of the third stage of labor include an increase in maternal diastolic blood pressure (RR = 7.0; 95% CI, 2.99 to 16.43; two studies; n = 2,941); increased use of analgesia (RR = 2.53; 95% CI, 1.34 to 4.78; one study; n = 1,429); an increase in reported pain (RR = 2.53; 95% CI, 1.34 to 4.78; one study; n = 1,429); and an increased number of women returning to the hospital as an inpatient or outpatient because of bleeding (RR = 2.21; 95% CI, 1.29 to 3.79; two studies; n = 2,941).

Current guidelines from the Royal College of Obstetricians and Gynaecologists, the World Health Organization, and the Society of Obstetricians and Gynaecologists of Canada all recommend active management of the third stage of labor with delayed cord clamping rather than early cord clamping.[6-8] ACOG recommends the use of uterotonics after all births.[9] Advanced Life Support in Obstetrics, administered by the American Academy of Family Physicians, also recommends active management.[10] The benefits and harms of active management should be discussed with all patients before this plan is enacted.

The practice recommendations in this activity are available at http://www.cochrane.org/CD007412.

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Epidural Corticosteroid Injections for Lumbosacral Radicular Pain

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Clinical Question

Are epidural corticosteroid injections safe and more effective than other injections for the treatment of lumbosacral radicular pain?

Evidence-Based Answer

Epidural corticosteroid injections for the treatment of lumbosacral radicular pain may offer modest short-term (two weeks to three months) benefit compared with placebo injection for radicular leg pain (mean difference [MD] = −4.93; 95% CI, −8.77 to −1.09 on a scale of 0 to 100) and disability (MD = −4.18; 95% CI, −6.04 to −2.17 on a scale of 0 to 100). After three months, there does not appear to be any added benefit with the use of corticosteroid.[1] (Strength of Recommendation: B, based on inconsistent or limited-quality patient-oriented evidence.) Minor adverse effects from corticosteroid injection are no more common than with placebo injection, based on very low-quality data.

Practice Pointers

Lumbosacral radicular pain is radiating pain that results from injury or irritation of nerve roots in the lower back. Lumbosacral radicular pain is most often caused by disc herniation with nerve root compression. Most patients with this condition improve over time, but the degree of pain and disability is variable and leads some patients to seek invasive intervention. Epidural corticosteroid injections can be administered in an

outpatient setting. This review sought to determine if epidural corticosteroid injection is more effective than placebo injection for the treatment of lumbosacral pain and disability.

This Cochrane review included 25 randomized trials and 2,470 patients[1]; it updates a previous 2012 review. Six additional studies were added to this review, but the overall conclusions were largely unchanged from 2012. The review considered only trials that included a placebo injection as the control arm of the study. Results of individual studies were grouped by timing of response measured and thus characterized as immediate (less than two weeks), short term (two weeks to three months), intermediate term (three to 12 months), and long term (more than 12 months). Pain assessment varied among studies but was converted to a 100-point scale for the purpose of comparison. Disability assessment also varied from study to study, but the authors converted these assessments to a 100-point scale as well. It is important to note that injection of steroid was compared with injection of saline or local anesthetic rather than watchful waiting, physical therapy, or surgical intervention.

Comparison between studies is complicated by data gathering at different times after injection and by the studies reporting a single pain level (pain intensity) vs. the difference in pain after treatment (pain relief). Anatomic location of pain vs. overall pain end points further complicates comparison analysis.

Epidural corticosteroid injections were slightly more effective than placebo in reducing leg pain at short-term follow-up (MD = −4.93; 95% CI, −8.77 to −1.09 on a scale of 0 to 100). Epidural corticosteroid injections were also slightly more effective than placebo in reducing disability at short-term follow-up (MD = −4.18; 95% CI, −6.04 to −2.17 on a scale of 0 to 100).

Epidural corticosteroid injections do not appear to be more effective than placebo at intermediate- or long-term follow-up for reducing overall pain, back pain in general, pain relief, or risk of disability. The caveat is that both types of injection can result in some immediate and long-term pain relief that is not well characterized in this review. The trend over time is for diminished benefit regardless of the injection used.

The U.S. Food and Drug Administration has warned that injection of corticosteroids into the epidural space of the spine may result in rare but serious adverse effects, including loss of vision, stroke, paralysis, and death.[2] It has been suggested that these rare complications are the result of particulate steroids; no adverse outcomes have been reported with epidural corticosteroid injections when nonparticulate steroids were used. A separate study, not included in this review, demonstrated no difference in effectiveness between particulate and nonparticulate steroids, but it remains unclear if the risk of adverse effects is different.[3] For select patients, the amount of pain and disability relief may justify epidural injection, with or without steroids, after a shared decision-making process.[4,5] The additional short-term pain relief gained by adding steroids to the injection may not be clinically significant.

The practice recommendations in this activity are available at http://www.cochrane.org/CD013577.

The opinions or assertions contained herein are the private views of the authors and are not to be construed as official or reflecting the views of the Department of Defense or the Uniformed Services University of the Health Sciences.

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