

# FPIN's Help Desk Answers

## Epidural Analgesia and Risk of Cesarean Delivery

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### Clinical Question

Is there an increased risk of cesarean delivery in women who receive epidural analgesia in the latent phase of the first stage of labor compared with the active phase?

### Evidence-Based Answer

There is no difference in the risk of cesarean delivery in women who receive epidural analgesia before 4 to 5 cm cervical dilation compared with later dilation. (Strength of Recommendation: A, based on a meta-analysis of randomized controlled trials [RCTs].)

### Evidence Summary

A 2014 meta-analysis of nine RCTs (N = 15,752; age range = 18 to 36 years) compared the effects of early vs. late epidural analgesia in full-term nulliparous women with a singleton pregnancy in vertex presentation.<sup>1</sup> Although definitions varied by trials, analgesia generally was defined as early when given before 4 to 5 cm cervical dilation and late when given after 4 to 5 cm dilation. Analgesia was administered in different doses, with various medications, and sometimes in combination with other analgesics. Intravenous opioids were given before randomization in six studies, participants in the late group did not receive any analgesia before the epidural in two studies, and intrathecal analgesia was given to both groups before the epidural in one study. Epidural analgesia was dosed by bolus rather than continuous infusion in four studies. When results from all studies were pooled, there was no difference in the risk of cesarean

delivery with early vs. late epidural analgesia (relative risk = 1.02; 95% confidence interval, 0.96 to 1.1; I<sup>2</sup> = 0%). In subgroup analysis, there was no difference between epidural vs. combined spinal epidural analgesia, opioid regimens vs. local anesthetic only, high-dose vs. low-dose epidural analgesia, and spontaneous labor vs. induced labor. Most of the studies were rated as high-quality evidence with low risk of bias.

In 2017, the American College of Obstetricians and Gynecologists reaffirmed its opinion that epidural analgesia may be given without concern for increased cesarean delivery rates, regardless of the phase of labor.<sup>2</sup> This opinion is based on a review of one RCT included in the 2014 systematic review discussed above.

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### References

1. Sng BL, Leong WL, Zeng Y, et al. Early versus late initiation of epidural analgesia for labour. *Cochrane Database Syst Rev*. 2014;(10):CD007238.
2. ACOG Committee on Practice Bulletins—Obstetrics. Practice bulletin no. 177: obstetric analgesia and anesthesia. *Obstet Gynecol*. 2017; 129(4):e73-e89. ■

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