



Does one particular cesarean technique confer better maternal and neonatal outcomes?

According to results from the CORONIS follow-up study that analyzed 5 intervention pairs for cesarean delivery in 13,153 women over a mean of 3.8 years, there was **no evidence to favor one technique over another**. The trial was conducted at 19 sites in low- and middle-income countries. Interventions studied were blunt versus sharp abdominal entry, exteriorization of the uterus for repair versus intra-abdominal repair, single- versus double-layer closure of the uterus, closure versus nonclosure of the peritoneum, and chromic catgut versus polyglactin-910 for uterine repair. Pelvic pain, deep dyspareunia, hysterectomy, outcomes of subsequent pregnancies, neonatal death, and serious neonatal morbidity were among the outcomes analyzed.

FAST TRACK

In this large trial, no surgical technique for cesarean delivery resulted in improved outcomes when compared with the others

CORONIS Collaborative Group. Caesarean section surgical techniques: 3 year follow-up of the CORONIS fractional, factorial, unmasked, randomised controlled trial. Lancet. 2016;388(10039):62-72.

► EXPERT COMMENTARY

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Five years ago one of our interns operating with the director of labor and delivery challenged him as to why we were not using evidenced-based surgical techniques for cesarean delivery. Bruised by the formidable (and at times misleading) club of “evidence-based medicine” that is held as sacrosanct

by the modern obstetrician, the director responded to the charge by researching a systematic review on abdominal delivery that amalgamated studies of poor quality with precious few trials. He unilaterally decided that we needed an opening in the transparent portion of the drape overlying the incision site so that we might use “evidence” to prevent operative site infection. The end result: No change in the incidence of wound infections, and adhesive drapes that did not adhere well, thereby displacing the effluent of amniotic fluid and blood that are part of a cesarean delivery back into the first assistant’s socks, shoes, and clothing. It was as if the clock had been turned back to my early years as an attending when we had cloth drapes. So much for having an evidence-based protocol. I was thus elated at reading the results of the CORONIS trial.

The author reports no financial relationships relevant to this article.

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Details of the study

The CORONIS trial, in which investigators randomly assigned almost 16,000 women from 7 countries (Argentina, Chile, Ghana, India, Kenya, Pakistan, and Sudan), used a sophisticated factorial design and followed up 13,153 (84%) of the women for 3 years. The investigators tested an array of technical questions about 5 intervention pairs used during abdominal delivery and reported the main outcomes of interest for each intervention, including:

- blunt versus sharp abdominal entry—no evidence of a difference in risk of abdominal hernias (adjusted risk ratio [RR], 0.66; 95% confidence interval [CI], 0.39–1.11)
- exteriorization of the uterus versus intra-abdominal repair—no evidence of a difference in risk of infertility (RR, 0.91; 95% CI, 0.71–1.18) or of ectopic pregnancy (RR, 0.50; CI, 0.15–1.66)
- single- versus double-layer closure of the uterus—no evidence of a difference in maternal death (RR, 0.78; 95% CI, 0.46–1.32) or a composite of pregnancy complications (RR, 1.20; 95% CI, 0.75–1.90)
- closure versus nonclosure of the peritoneum—no evidence of a difference in any outcomes relating to symptoms associated with pelvic adhesions, such as infertility (RR, 0.8; 95% CI, 0.61–1.06)
- chromic catgut versus polyglactin-910 sutures—no evidence of a difference in the main comparisons for adverse pregnancy

WHAT THIS EVIDENCE MEANS FOR PRACTICE

Minor changes in technique had little impact on outcomes, and the misnomer of “evidence-based cesarean delivery” was clearly shown in the CORONIS trial to have no substance. Thanks to Peter Brocklehurst and his global colleagues for arming us with high-quality data.

A word to the wise: Evidence is not created equally, and pushing it into lumps does not increase its value.

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outcomes in a subsequent pregnancy, such as uterine rupture (RR, 3.05; 95% CI, 0.32–29.29).

Strengths and limitations. The CORONIS trial included a large number of participants and had comprehensive follow-up, a rigorous data collection process, and the participation of many countries. The trial’s participating centers, however, were mostly large referral hospitals with high research interest; adverse outcomes might have been higher in other settings. As well, a lower incidence of subsequent pregnancy among participants limited the study’s power to detect differences in outcomes between the intervention pairs.

Conclusions. None of the alternative techniques produced any real benefits despite syntheses-suggested benefit reported in systematic reviews. Surgeon preference for cesarean delivery techniques likely will continue to guide clinical practice along with economic and institution factors. 🚫