What Is New in Postpartum Hemorrhage?

Best Articles From the Past Year

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This month, we focus on current research in postpartum hemorrhage. Dr. Rouse discusses five recent publications, and each is concluded with a “bottom line” that is the take-home message. The complete reference for each can be found in Box 1 on this page, along with direct links to the abstracts.

Epidemiological Investigation of a Temporal Increase in Atonic Postpartum Haemorrhage: A Population-Based Retrospective Cohort Study

Over the past 2 decades in the developed world, the rate of postpartum hemorrhage due to uterine atony has increased. In some studies, but not all, maternal obesity has been implicated in this increase, as has more frequent and higher-dose oxytocin use for labor induction and augmentation. The study of Mehrabadi et al, based on almost 400,000 Canadian births, suggests that the upward trend in postpartum hemorrhage has not leveled off. The rate of postpartum hemorrhage due to uterine atony increased from 4.8% in 2001 to 6.3% in 2009, and the respective rates of blood transfusion for such hemorrhage increased from 16.6 to 25.5 per 10,000 deliveries. The rate of transfusion of at least 3 units of blood for uterine atony went from 11.9 to 17.6 per 10,000 births. Adjustment for multiple risk factors, including maternal age, parity, body mass index, multiple gestation, and oxytocin for labor induction or augmentation, did not explain the 34% rise in postpartum hemorrhage due to uterine atony.

Bottom Line: Postpartum hemorrhage due to uterine atony is on the rise. Therefore, hospitals and birthing units should have straightforward protocols for dealing with it.

Box 1. Abstracts Discussed in This Commentary


Effect of Routine Controlled Cord Traction as Part of the Active Management of the Third Stage of Labour on Postpartum Haemorrhage: Multicentre Randomised Controlled Trial (TRACOR)

Active management of the third stage of labor, consisting of the administration of a uterotonic, prompt clamping and cutting of the umbilical cord, and controlled cord traction, is an internationally promoted approach to the prevention of postpartum hemorrhage. On the basis of several randomized trials, such management has been estimated to reduce the rate of postpartum hemorrhage by at least 50%.

Whether controlled cord traction is an independent contributor to the reduction in postpartum hemorrhage achieved with active management was the main question addressed in the five-center French study by Deneux-Tharaux et al. The answer is no—the rate of postpartum hemorrhage for the 2,005 women treated with cord traction was 9.8% compared with 10.3% for the 2,008 treated without traction (relative risk [RR] 0.95, 95% confidence interval [CI] 0.79–1.15). There were, however, benefits to cord traction, including a reduced need for manual placenta removal (4.2% compared with 6.1%, RR 0.69, 95% CI 0.53–0.90) and a lower rate of third-stage duration greater than 15 minutes (4.5% compared with 14.3%, RR 0.31, 95% CI 0.25–0.39). Additionally, women in the traction arm reported significantly less discomfort and pain. Importantly, none of the women treated with controlled cord traction experienced uterine inversion.

**Bottom Line:** Controlled cord traction does not reduce postpartum hemorrhage. It does, however, lessen the need for manual placenta removal, shorten the duration of the third stage of labor, and reduce maternal discomfort, and it does not cause uterine inversion.

Higher-Dose Oxytocin and Hemorrhage After Vaginal Delivery: A Randomized Controlled Trial

If atonic postpartum hemorrhage is on the rise, as the current literature, including the study by Mehrabadi et al, suggests, a logical question is whether it can be prevented by optimized preventive practices: for example, by administering a higher dose of prophylactic oxytocin as part of the management of the third stage of labor. This question was addressed previously in women undergoing cesarean delivery. In the double-blind study by Munn et al, 321 women undergoing cesarean delivery were randomized to either 10 or 80 units of oxytocin diluted in 500 mL of lactated Ringer’s administered over 30 minutes after cord clamping. The trial suggested that there was a benefit to the higher dose of oxytocin because women in the low-dose oxytocin group were more likely to receive an additional uterotonic medication (39% compared with 19%, RR 2.1, 95% CI 1.4–3.0). Moreover, the higher dose of oxytocin was not associated with any measured adverse effects, including hypotension. The recently published randomized, double-blinded trial by Tita et al was conducted among almost 3,000 women who had undergone vaginal delivery. They compared 10 and 80 units of oxytocin diluted in 500 mL of normal saline and infused over 1 hour after delivery of the placenta. The Tita trial did not bear out the promising results of Munn et al—80 units of oxytocin did not lower the rate of postpartum hemorrhage compared with 10 units (6% compared with 7%, RR 0.93, 95% CI 0.62–1.40).

**Bottom Line:** After vaginal delivery, 80 units of dilute oxytocin administered over 1 hour is no more effective than 10 units in preventing postpartum hemorrhage.

Primary Postpartum Hemorrhage: Outcome of Pelvic Arterial Embolization in 251 Patients at a Single Institution

**Predictive Factors for Failure of Pelvic Arterial Embolization for Postpartum Hemorrhage**

In properly selected patients and appropriately equipped and staffed facilities, pelvic arterial embolization offers the potential to arrest refractory postpartum hemorrhage when medical therapy or uterine tamponade has failed, as attested to by the large, single-center experiences reported by Lee et al (251 patients over 11 years in a Korean hospital) and Poujade et al (98 patients over a 2-year period in a French hospital). Lee et al report a clinical success rate of 87%, defined as cessation of hemorrhage after one embolization session with no need for further embolization or surgery, and Poujade et al report a success rate of 92%. In the study by Lee et al, disseminated intravascular coagulation and massive transfusion were associated with embolization failure in approximately one third of cases; in the study by Poujade et al, embolization failed in three of seven placenta accreta cases (43%). Five women (2%) in the former series died and none in the latter.

**Bottom Line:** Pelvic arterial embolization often can arrest refractory postpartum hemorrhage. It is less effective in the presence of disseminated intravascular coagulation and placenta accreta.

**REFERENCES**
