Pulsatile vs Continuous Oxytocin: Which is Better?

July 27, 2012
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A new study compares how pulsatile oxytocin infusion and continuous delivery of the synthetic hormone affect delivery outcomes in labor inductions and augmentations.

Pulsatile oxytocin infusion does not improve delivery outcomes in women requiring induction or augmentation of labor, according to results of a new study comparing how pulsatile oxytocin infusion and continuous delivery of the synthetic hormone affect delivery outcomes in labor inductions and augmentations.¹

Primary outcomes were cesarean section rate in the induction trial and operative delivery rates, including combined forceps, ventouse, and cesarean section, in the augmentation trial. For both trials, secondary outcomes were vaginal delivery not occurring within 24 hours and time from start of induction to delivery. In the induction trial, the number of women who received vaginal prostaglandins for cervical ripening was similar for both groups.

The starting dose of oxytocin was 2 milliunits/minute in the continuous dose group and 2 milliunits/pulse in the pulsatile group for both trials. Women in the pulsatile group received one sixth of the standard continuous dose over a 30-minute period. (Oxytocin was administered for 10 seconds every 6 minutes, and the dose was doubled every 30 minutes until the uterus was regularly contracting.)

In the induction trial, rates of cesarean section were similar for both treatment groups; 40.9% of women in the continuous group and 43.9% of women in the pulsatile group were unable to deliver vaginally within 24 hours. In addition, the mean time from infusion to delivery was longer in the pulsatile group (11.27 hours vs 9.33 hours in the continuous group). The mean time from stage 1 of labor to delivery was similar for both groups (10.55 hours for continuous group vs 11.33 hours for pulsatile group).

In the augmentation trial, rates of operative delivery were higher in the pulsatile group than in the continuous group (70.1% vs 62.7%, respectively). Also, 37.3% of women in the continuous group and 47.4% of women in the pulsatile group were unable to deliver vaginally within 24 hours.

In both trials, the mean time from infusion to delivery was significantly longer in the pulsatile groups (11.27 hours vs 9.33 hours in the induction trial; 9.61 hours vs 7.17 hours in the augmentation trial). In addition, pulsatile infusion was associated with an increase in neonatal morbidity. Although pulsatile infusion is effective for induction of labor, it confers little benefit.

Pertinent Points:
- Pulsatile infusion of oxytocin is as effective as continuous infusion for promoting vaginal delivery in women requiring induction but is associated with slightly longer labor.
- For women requiring oxytocin for augmentation of labor, pulsatile infusion of oxytocin offers no clinical benefit.


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