Misoprostol vs. Oxytocin For Postpartum Bleeding

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Oral misoprostol may be as effective as intravenous oxytocin for controlling postpartum hemorrhage, based on data from two studies. Both studies involved an off-label use of misoprostol, and each study included more than 800 women. Oxytocin is the drug of choice for postpartum bleeding, but misoprostol may be more feasible in areas with limited resources, said Dr. Beverly Winikoff of Gynuity Health Projects in New York City and her colleagues.

The first study, conducted by Dr. Winikoff and her colleagues, assessed the effectiveness of oral misoprostol as an alternative to oxytocin at four hospitals: one in Ecuador, one in Egypt, and two in Vietnam. The researchers randomized 488 women to receive four 200-mcg tablets of misoprostol and an intravenous saline placebo, while 490 women received 40 IU of intravenous oxytocin and placebo tablets. The average age of the patients was 25 years, and the median blood loss at the time of treatment was 700 mL (Lancet 2010 Jan. 7 [doi:10.1016/S0140-6736(09)61924-3]).

Within 20 minutes of administration, active bleeding was controlled in 440 (90%) of the women in the misoprostol group and 468 (96%) of the women in the oxytocin group. This difference was statistically significant. In addition, significantly more women in the misoprostol group bled at least 300 mL after treatment, compared with the oxytocin group (30% vs. 17%).

Oxytocin plus active bleeding 2 minutes faster, on average, than did misoprostol, and women in the oxytocin group lost approximately 50 mL less blood than did women in the misoprostol group, the researchers noted. Women in the misoprostol group were significantly more likely than those in the oxytocin group to report shivering (37% vs. 15%) and fever (44% vs. 6%). No women in either group had hysterectomies and no deaths were reported.

Although the difference in treatments was statistically significant, misoprostol could substitute for oxytocin in certain settings, Dr. Winikoff and her colleagues said. “Since many women in developing countries deliver at home or at low-level facilities, misoprostol provides a potential for immediate treatment of postpartum hemorrhage.”

In a second study conducted by Gynuity Health Projects, lead author Jennifer Blum and her colleagues compared 800 mcg of oral misoprostol to 40 IU of intravenous oxytocin for primary postpartum hemorrhage in women who had received prophylactic oxytocin during the third stage of labor. This study included 407 women in the misoprostol group and 402 women in the oxytocin group. As in the first study, the average age of the patients was 25 years, and the median blood loss at the time of treatment was 700 mL. The study was conducted at five hospitals: one in Egypt, one in Turkey, one in Burkina Faso, and two in Vietnam (Lancet 2010 Jan. 7 [doi:10.1016/S0140-6736(09)61923-1]).

Within 20 minutes of administration, active bleeding was controlled in 363 (89%) of the misoprostol group and 360 (90%) of the oxytocin group. Additional blood loss of at least 300 mL occurred in 33 women (34%) in the misoprostol group and 123 women (31%) in the oxytocin group. The differences in bleeding between the two groups were not significant. But women in the misoprostol group were significantly more likely than those in the oxytocin group to report shivering (37% vs. 15%) and fever (44% vs. 6%). In this study, six women in the misoprostol group died because of uncontrolled postpartum bleeding (both with misoprostol).