

Comparing the effectiveness of two methods of oxytocin infusion in preventing atonic uterus

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Abstract

Introduction: Postpartum hemorrhage is one of the main causes of death in women, especially in developing countries. The prevalence of postpartum bleeding is reported to be between 2-6% in normal and 0.6% in caesarian deliveries. Atonic uterus is responsible for 75-90% of postpartum bleedings, and in case the condition is not corrected, the risk of mortality increases considerably. Oxytocin is one of the commonly available drugs with minimal side-effects for the control of atonic uteri. The objective of this study was to compare the effectiveness of two different dosages of oxytocin in preventing atonic uteri.

Materials and Methods: This is a clinical trial study performed on 566 patients who referred for normal vaginal deliveries or C/S to the labor ward of Sadoughi and Mojibian Hospital from late September to early March in 2003. The cases were randomly allocated to two groups. Both groups were similar regarding the risk factors for atonic uteri. Those in group I were each given 20 units while those in group II 100 units of oxytocin in 500 milliliters of Ringer's solution. The infusion was started 1 minute after expulsion of the fetus and continued for half an hour. The bleeding rate, uterine contraction, blood pressure, need for transfusion and hematocrit of patients during the first stage of labor and 6 hours postpartum were assessed and recorded. Results were analyzed by using SPSS software, descriptive statistics and χ^2 statistical test. The significance level was considered 0.05.

Results: In the low dosage oxytocin group (group I) 16 cases (5.7%) experienced atonia, while in group II with a higher dosage of oxytocin only 2 cases (0.7%) had atonia ($p < 0.001$). In group I, 10 cases (6.5%) and in group II, 1 case (0.6%) needed manual placental removal ($p < 0.005$). Fall in HCT was higher in group I (41.4%) as compared to group II (17.1%) and the difference was statistically significant ($p < 0.001$). Despite the higher fall in blood pressure in group I (13.6%) as compared to group II (8.8%), the difference between the two groups was not statistically significant ($p < 0.072$).

Conclusion: Infusions of high doses of oxytocin (3330mU/min) as compared to low doses of the drug, (666mU/min) over half an hour after delivery result in decreased rates of atonia and need for manual removal of placenta and also decreased fall of hematocrit postpartum. This mode of treatment had no special side-effects or complications. Therefore, based on the results of this study, use of high doses of oxytocin in comparison with various prostaglandins and methyl ergonovine, is cheaper, more available and with fewer complications, especially in developing countries.

Key Words: Atonic Uterus, Oxytocin, Caesarian Section, Normal Vaginal Delivery, Postpartum Hemorrhage, Manual Removal of Uterus, Hematocrit, Third and Fourth Stages of Labor.

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