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The effect of topical magnesium sulfate on cervical edema in labor

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Abstract

Background and Objectives: Cervical edema is one of the labor problems that can be one of the causes of dystocia and is also the most common cause of non-recurrent cesarean section. Cervical edema usually prevents the progression of the first stage of labor and prolongs the labor process. Prolonged labor increases the risk of infection, physical injury, and fetal death, and the mother is exposed to complications such as infection, postpartum hemorrhage (due to atony), and other problems such as fatigue, insomnia, and anxiety. The present study aimed at investigating the effect of magnesium sulfate on cervical edema in the delivery ward of Imam Khomeini Hospital of Divandarreh.

Materials and Methods: This randomized, double-blind clinical trial study was conducted in 2019 on women admitted to the maternity ward of Imam Khomeini Hospital, Divandarreh, Kurdistan, Iran. These women entered the present study provided that they met the inclusion criteria. As many as 80 patients were randomly divided into two groups of 40 patients. In the intervention group, 10 cc of 50% magnesium sulfate was poured topically on the cervix using a syringe between the examiner's fingers. If the cervical swelling did not improve, 10 cc of magnesium sulfate was poured on the cervix again after two hours. In the control group, 10 cc of normal saline was used with the same conditions. The rate of cervical edema (mild, moderate and severe) was measured by vaginal examination and recorded in the form of cervical edema. The collected data were entered into SPSS-23. Data analysis was conducted using descriptive statistics methods including t-test, chi-square test and analysis of variance with repeated measures, and $p < 0.05$ was considered as significant.

Results: The results of the study indicated that before the intervention, the rate of cervical edema in the control and magnesium sulfate groups were not statistically significant, so the groups were homogeneous ($p = 0.15$). Moreover, the mean cervical edema two hours ($p = 0.582$) and four hours ($p = 0.735$) after the intervention was not statistically significant between the control and magnesium sulfate groups.

Discussion: Given the ineffectiveness of magnesium sulfate on the improvement of cervical edema in this study, its use is not recommended until more extensive studies are conducted and the treatment certainty is confirmed.

Keywords: Magnesium sulfate, Cervical edema, Labor