

# The Effect of Subcutaneous and Intracutaneous Injections of Sterile Water and Normal Saline on Pain Intensity in Nulliparous Women: A Randomized Controlled Trial.

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## Abstract

### BACKGROUND:

Normal vaginal delivery is considered a painful process and it is difficult to tolerate the pain. The goal of this study was to compare the effect of injection of sterile distilled water and normal saline on pain intensity in nulliparous women.

### MATERIALS AND METHODS:

This triple-blind clinical trial was conducted on 164 nulliparous women randomly selected from among those who were hospitalized in Motahari Hospital of Jahrom, Iran, from 1 May 2012 to 1 October 2013. Women with a gestational age of 37-42 weeks, dilatation of 4-6 cm, and delivery 180 min after the intervention were selected. The subjects were randomly allocated to four groups of intracutaneous and subcutaneous sterile water and normal saline injections. Pain severity was measured 5 min before the injection and every 30 min up to 3 h after the injection using a visual analog scale. The data were analyzed using Chi-square, Scheffe, and Spearman's correlation tests in SPSS software.

### RESULTS:

There was no significant difference among the four studied groups concerning gestational age and other demographic characteristics. Chi-square test showed lower pain intensity 120 min after the injection in group 4 (subcutaneous injection of normal saline) ( $F_3 = 14.75, p < 0.001$ ) and 150 min after the injection in group 3 (intracutaneous injection of normal saline) ( $F_3 = 14.75, p < 0.001$ ). Chi-square test showed that the duration of the second stage of labor was shorter in group 4 participants (subcutaneous injection of normal saline) ( $F_3 = -12.23, p < 0.001$ ).

### CONCLUSIONS:

The study showed that subcutaneous and intracutaneous injection of normal saline reduced the intensity of pain during childbirth.

### KEYWORDS:

Labor duration; labor pain; pain relief; sterile water injections