



Lorestan University of Medical Sciences  
Faculty of Khorramabad Nursing & Midwifery

*A Thesis:*  
*Presented for the*  
*Degree of Master of Sciences*  
*In Pediatric Nursing*

Title:

**Comparison of the effect of Hugo acupressure point massage with kunlun (BL60) -Taixi  
(k3) points on intramuscular injection of preterm infants**

*By*  
**Atefeh Jadidi**

*Supervisor*  
**Dr. Seyed Fatemeh Ghasemi**

2022

## Abstract

**Background and purpose:** Premature newborns admitted to the intensive care unit are often exposed to painful and repetitive treatment measures including intramuscular injection. Due to the limitations and side effects of pharmacological methods, research is needed to find safe non-pharmacological methods to relieve the pain of small and frequent treatments. The aim of this study was to compare the effect of Hegu point massage (LI4) and simultaneous massage of kunlun (BL60) and taixi (K3) points on pain caused by intramuscular injection of premature newborns.

**Materials and Methods:** This three-blind clinical trial was performed on 100 premature newborns with a gestational age of 32-36 weeks in the neonatal intensive care units of Khorramabad teaching hospitals. The samples were readily available and divided into four groups of Hegu point massage, kunlun and taixi points massage, placebo and control by stratified random blocking method (sex, fetal age and birth weight). Before the intramuscular injection of vitamin K, the control group received only routine care, the intervention groups massaged the desired pressure points counterclockwise for 2 minutes, and the placebo group received massage of the tip of the nose, which is not acupressure points, in the same way. Pain was measured using the Astrid Lindgren Children's Hospital Pain Scale (ALPS) and the duration of crying, increased heart rate, and decreased SPO<sub>2</sub> after injection. Data were analyzed by paired t-test, independent t-test and repeated measures analysis of variance.  $P < 0.05$  was considered as a significant level.

**Results:** The studied groups were not similar and did not differ significantly in terms of individual characteristics ( $P > 0.05$ ). The mean pain score in acupressure groups was lower than control and placebo groups but there was no significant difference ( $P > 0.05$ ). The mean duration of crying in acupressure groups was longer than control and placebo groups, but this difference was not significant ( $P = 0.282$ ). In the acupressure groups during and after intramuscular injection, the mean heart rate was significantly lower ( $P < 0.05$ ) and SPO<sub>2</sub> was higher than the control and placebo groups ( $P < 0.028$ ). Two-by-two heart rate comparison between groups showed that during intramuscular injection, there was a significant difference in heart rate between the control group and observation of Kenlon and Tyxi sites only ( $P = 0.039$ ) and there was no significant difference between the other groups. After intramuscular injection between the groups, there was a significant difference between the control group and simultaneous pressure of Conlon and Tyxi points ( $P = 0.004$ ) and also between the control group and placebo ( $P = 0.008$ ). but between other There were no differences between the groups.

**Conclusion:** The use of acupressure before intramuscular injection in premature newborns can reduce changes in physiological indicators of pain, including heart rate and SPO<sub>2</sub>, and thus prevent increased demand in the cardiovascular system and jeopardize the hemodynamic status of the newborns.

**Keywords:** Acupressure, Taixi point, Kunlun point, Hegu point, Pain, Physiological Response, Premature, Intramuscular, Injection