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Breastfeeding or oral sucrose solution in term neonates receiving heel lance: a randomized, controlled trial.

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OBJECTIVE: The purpose of this work was to compare the efficacy of breastfeeding versus orally administered sucrose solution in reducing pain response during blood sampling through heel lance. **METHODS:** We conducted an open-label, randomized, controlled trial at a neonatal unit of a public hospital in northern Italy on 101 term neonates undergoing heel lance with an automated piercing device for routine neonatal screening for congenital disorders. Newborn infants were randomly assigned to breastfeeding during blood sampling or to the oral administration of 1 mL of 25% sucrose solution. We validated the multidimensional acute pain rating scale of the Premature Infant Pain Profile, heart rate increase, oxygen saturation decrease, crying behavior (duration of first cry, cry percentage in 2 minutes, and during blood sampling), duration of sampling, and the number of performed heel lances. **RESULTS:** Median Premature Infant Pain Profile scores were lower in the breastfeeding group (3.0) than in the sucrose-solution group (8.5), and the median group difference was -5.0. The median heart rate increase, oxygen saturation decrease, and duration of first cry for the breastfeeding group were, respectively, 13.0, -1, and 3 and for sucrose group were 22, -3, and 21. Medians were significantly different between the groups. There were no significant differences in the sampling duration and numbers of heel lances. **CONCLUSIONS:** This study suggests that breastfeeding provides superior analgesia for heel lance compared with oral sucrose in term neonates.

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