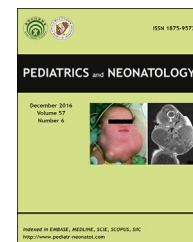


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## LETTER TO THE EDITOR

# Effects of Breast Milk and Vanilla Odors on Premature Neonates' Heart Rate and Blood Oxygen Saturation During and After Venipuncture

To the Editor,

We read with great interest the current study by Neshat et al<sup>1</sup> on the effects of breast milk odor, but not vanilla odor, in decreasing the variability of heart rate and blood-oxygen saturation when administering painful procedures to premature neonates. The author concluded that breast-milk odor has a significant calming effect on premature neonates during certain painful procedures. It was inspirational to us to learn that premature neonates could actually be calmed by breast-milk odor as compared with results observed in full-term infants. However, we have some concerns about the study design before the final result can be established.

During the painful venipuncture procedure, premature neonates were divided into three groups: control, vanilla odor, and breast-milk odor. To familiarize the premature neonates with vanilla odor, cotton balls dipped in vanilla solution were placed in incubators for 12 h prior to venipuncture. However, because all 135 premature neonates were already steadily being breast fed, it is possible that the neonates in the vanilla-odor group were still more familiar with breast-milk odor, even after to vanilla odor for 12 h. Therefore, we can only conclude that the calming effects associated with vanilla odor were not as effective as those observed for breast-milk odor in breast-fed preterm neonates, excluding those fed with infant formula.

Second, the preterm neonates in this study were not fed 30 min before venipuncture, which eliminated the calming effect of feeding on the neonates. However, the interval between their last meal and the painful procedure may be a bias that actually contributes to the pain sensation due to the different degrees of hunger elicited. To eliminate the hunger effect, it would be better if the authors performed blood sampling at the same time before feeding.

Additionally, different concentrations of vanilla solution may also cause a different effect on pain control. It would be

more convincing had this study included different concentrations of vanilla for development of the odor, and if the effects were compared with those of placebos.

The topic of relieving pain using non-pharmaceutical methods in neonates is an interesting and important issue, particularly for premature neonates who have a high risk of intraventricular hemorrhage. The ease of availability of breast milk and its effect on stabilizing vital signs makes it more precious for these premature neonates. For premature neonates who are not breast fed, further studies should be conducted to establish whether breast-milk or vanilla odor has a calming effect during painful procedures.

## Conflicts of interest

The authors have no conflicts of interest to declare.

## References

1. Neshat H, Jebreili M, Seyyedrassouli A, Ghojzade M, Hosseini MB, Hamishehkar H. Effects of breast milk and vanilla odors on premature neonates' heart rate and blood oxygen saturation during and after venipuncture. *Pediatr Neonatal* 2016;57:225–31.

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