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NEWS RELEASE
UNDER EMBARGO UNTIL OCTOBER 19, 2011 12:01 AM ET

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Can Breastfeeding Reduce Pain in Preterm Infants?

Effects Evaluated in New Study Published in *PAIN*®

Philadelphia, PA, October 19, 2011 – Poorly managed pain in the neonatal intensive care unit has serious short- and long-term consequences, causing physiological and behavioral instability in preterm infants and long-term changes in their pain sensitivity, stress arousal systems, and developing brains. In a study published in the November issue of *PAIN*®, researchers report that breastfeeding during minor procedures mitigated pain in preterm neonates with mature breastfeeding behaviors.

Currently, pain associated with minor procedures such as pricking for blood tests is managed with interventions such as skin-to-skin contact, pacifiers, and sweet tastes, but these produce only modest and/or inconsistent relief. In normal term-born infants, breastfeeding during painful procedures has been shown to reduce pain response by 80-90% and has no serious side effects, but this approach had not previously been tested in preterm infants. One concern is that preterm infants might come to associate breastfeeding with the painful procedure, jeopardizing their ability to feed effectively enough to adequately gain weight.

In a randomized clinical trial, investigators from the Child & Family Research Institute at BC Children's Hospital and The University of British Columbia in Vancouver, BC, conducted a study to learn if preterm infants would show lower pain scores when breastfed during blood collection. They also looked at whether breastfeeding during the painful procedure would have a negative impact on the development of breastfeeding skills, and whether infants who had more mature breastfeeding behaviors would have lower pain scores and heart rates during blood collection than less experienced feeders.

Fifty-seven infants born at 30 to 36 weeks gestational age were divided into two groups. One group was breastfed during blood collection. The other group was given a pacifier. During the procedure, their faces and hands were videotaped, their responses were scored using the Behavioral Indicators of Infant Pain, and their heart rates were measured. Breastfed babies were also scored according to the Premature Infant Breastfeeding Behaviors scale.

For the group as a whole, breastfeeding did not reduce either behavioral or physiological pain during blood collection. Nevertheless, no immediate adverse effects were found on breastfeeding skill development. "Our sample of infants was assessed early in their breastfeeding experience; none of our infants were fully established on breastfeeds," says lead investigator Liisa Holsti, PhD, Clinician Scientist at the Child & Family Research Institute; Assistant Professor, Department of Occupational Science and Occupational Therapy, University of British Columbia; and a Canada Research Chair in Neonatal Health and Development. "For infants whose breastfeeding skills are inconsistent, it is unlikely to mitigate pain effectively."

In the breastfed group, however, infants who were more advanced in their ability to feed did have significantly lower behavioral pain scores. Despite concerns that blood sampling during breastfeeding may be more difficult, the authors report that the time taken for the procedure in the breastfed group was significantly shorter, making blood collection more efficient.

"Finding creative ways to apply breastfeeding for pain mitigation in premature infants is important, because recent research suggests that sweetening agents used to reduce minor procedural pain may act as sedatives rather than analgesics, and they may have negative effects on development," says Professor Holsti. "Our findings support further research on the effects of breastfeeding for more mature feeders over repeated events to assess both the short- and long-term benefits of the treatment."

The article is "Does breastfeeding reduce acute procedural pain in preterm infants in the neonatal intensive care unit? A randomized clinical trial," by Liisa Holsti, Timothy F. Oberlander, and Rollin Brant (DOI: 10.1016/j.pain.2011.07.022). It will appear in *PAIN*®, Volume 152, Issue 11 (November 2011) published by Elsevier.

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NOTES FOR EDITORS

Full text of the articles is available to credentialed journalists upon request. Contact Christine Rullo at 215-239-3709 or painmedia@elsevier.com for copies. Journalists wishing to set up interviews should contact Jennifer Kohm at 604-875-2401 or jkohm@cfri.ca.

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