

## **Sucrose and Pacifier Provide Pain Relief During Nasogastric Tube Insertion in Preterm Infants**

Giving preterm infants a pacifier and 30% sucrose immediately before insertion of a nasogastric tube significantly reduces pain associated with the procedure.

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May 3, 2011 – Nasogastric tube insertion causes measurable pain and discomfort in preterm infants, but giving a pacifier in combination with a 0.2 ml oral dose of 30% sucrose immediately beforehand significantly reduces the pain, according to the findings of a randomized, placebo-controlled study.

Laila Kristoffersen, RN, with the St Olav's University Hospital, in Trondheim, Norway, and colleagues reported their findings in the May 3, 2011, edition of *Pediatrics* online.

According to the researchers, “this is the first randomized study of nasogastric tube insertion in preterm infants that investigates sucrose and/or a pacifier for pain relief in a factorial design. It is a clinically relevant problem because nasogastric tube insertion is done in virtually every preterm neonate irrespective of disease status.”

The authors assessed pain and discomfort of nasogastric tube insertion in 24 preterm infants in stable condition (postmenstrual age 28 to 32 weeks at first intervention) using the Premature Infant Pain Profile (PIPP) scale.

At each of the bi-weekly changes of their nasogastric tube during the 3-week study period, each infant obtained one of 6 different interventions in random order: nothing, 0.2 ml oral sterile water only, 0.2 ml oral sucrose only, pacifier only, pacifier plus sterile water, and pacifier plus sucrose. Fluid administration but not pacifiers were concealed from the observers recording PIPP scores during and at 1 and 5 minutes after tube insertion.

Providing a combination of sucrose and pacifier during tube insertion yielded significant pain reduction ( $P < .001$  versus no treatment), while sterile water without a pacifier resulted in a higher score than no intervention. According to the authors, their findings agree with previously published studies on pain relief during blood sampling in infants, but “more research is needed on the mechanism of sweet solutions in neonates as well as the longterm neurodevelopmental effects of repeated sucrose use.”

Immediately after tube insertion, infants showed measurable pain and discomfort evident from a median PIPP score above 6 (median 9, range 3-18). However, pain was transient, and regardless of the type of intervention, scores were normal within 5 minutes of the procedure (median of 6 after 1 minute, and 4 after 5 minutes).

“Thus, the discomfort is brief per se but not to be ignored” the authors conclude. “Duration of pain might be an important factor that needs further study. Repeated invasive procedures may contribute to long-term changes in the stress system in neonates.”

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