

## **To review all trials evaluating sweet solutions for analgesia in neonates and to conduct cumulative meta-analyses (CMAs) on behavioral pain outcomes” Harrison et al (2017).**

Abstract:

CONTEXT: Abundant evidence of sweet taste analgesia in neonates exists, yet placebo-controlled trials continue to be conducted.

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OBJECTIVE: To review all trials evaluating sweet solutions for analgesia in neonates and to conduct cumulative meta-analyses (CMAs) on behavioral pain outcomes.

DATA SOURCES: (1) Data from 2 systematic reviews of sweet solutions for newborns; (2) searches ending 2015 of CINAHL, Medline, Embase, and psychINFO.

DATA EXTRACTION AND ANALYSIS: Two authors screened studies for inclusion, conducted risk-of-bias ratings, and extracted behavioral outcome data for CMAs. CMA was performed using random effects meta-analysis.

RESULTS: One hundred and sixty-eight studies were included; 148 (88%) included placebo/no-treatment arms. CMA for crying time included 29 trials (1175 infants). From the fifth trial in 2002, there was a statistically significant reduction in mean cry time for sweet solutions compared with placebo ( $-27$  seconds, 95% confidence interval  $-51$  to  $-4$ ). By the final trial, CMA was  $-23$  seconds in favor of sweet solutions (95% CI  $-29$  to  $-18$ ). CMA for pain scores included 50 trials (3341 infants). Results were in favor of sweet solutions from the second trial (0.5, 95% CI  $-1$  to  $-0.1$ ). Final results showed a standardized mean difference of  $-0.9$  (95% CI  $-1.1$  to  $-0.7$ ).

LIMITATIONS: We were unable to use or obtain data from many studies to include in the CMA.

CONCLUSIONS: Evidence of sweet taste analgesia in neonates has existed since the first published trials, yet placebo/no-treatment, controlled trials have continued to be conducted. Future neonatal pain studies need to select more ethically responsible control groups.

Reference:

Harrison, D., Larocque, C., Bueno, M., Stokes, Y., Turner, L., Hutton, B. and Stevens, B. (2017) Sweet Solutions to Reduce Procedural Pain in Neonates: A Meta-analysis. *Pediatrics*. 139(1), p.e20160955.

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