

Randomized Crossover Trial of Kangaroo Care to Reduce Biobehavioral Pain Responses in Preterm Infants: A Pilot Study.

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Abstract

Kangaroo care (KC), skin-to-skin contact between mother and infant, is a promising method for blunting pain responses. This crossover pilot tested KC effects on biobehavioral responses to heel stick in preterm infants (30-32 weeks' gestational age, 2-9 days old) measured by Premature Infant Pain Profile (PIPP) and salivary and serum cortisol. Mother-infant dyads were randomly assigned to KC heel stick (KCH) first or incubator heel stick (IH) first. Study 1 (80-min study, N = 18) tested the effect of 80 min of KC before and throughout the heel stick procedure versus incubator care. Study 2 (30-min study, N = 10) tested 30 min of KC before and throughout the heel stick versus incubator care. KCH and IH began during a premeasurement phase and continued through four data collection phases: baseline, heel warming, heel stick, and recovery. PIPP responses were measured every 30 s during data collection; salivary cortisol was measured at the end of baseline and recovery; and serum cortisol was measured during heel stick. Study 1 showed no differences between KCH and IH. Study 2 showed lower PIPP scores at four time points during recovery ($p < .05$ to $p < .001$), lower salivary cortisol at the end of recovery ($p < .05$), and lower serum cortisol during heel stick for the KCH condition ($p < .05$) as well as clinically lower PIPP scores in the KCH condition during heel stick. Thirty minutes of KC before and throughout the heel stick reduced biobehavioral responses to pain in preterm infants.

PMID: 21196428 [PubMed - as supplied by publisher]