

Parental oxytocin responses during skin-to-skin contact in pre-term infants.

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Abstract

OBJECTIVE:

Maternal skin-to-skin contact (M-SSC) has been found to reduce adverse consequences of prematurity, however, its neurobiological mechanisms have been unknown. The purpose of the study was to examine oxytocin mechanism in modulating parental stress and anxiety during M-SSC and P-SSC (paternal SSC) with their pre-term infants.

METHODS:

Twenty-eight stable pre-term infants and their parents (triads) were recruited in a 2-day cross-over study and 26 mothers and 19 fathers completed the study protocol. Each triad was randomly assigned to one of the two sequences: M-SSC was conducted on day-1 and P-SSC on day-2; and P-SSC on day-1 and M-SSC on day-2. Parents' saliva samples for oxytocin and cortisol assays and visual analog anxiety levels were collected pre-SSC, 30-min during-SSC, and 30-min post-SSC.

RESULTS:

Both maternal and paternal oxytocin levels were significantly increased during-SSC from baseline. Maternal oxytocin dropped post-M-SSC, but paternal oxytocin continued to be maintained at a higher level during post-P-SSC. Both maternal and paternal cortisol levels significantly decreased during-SSC from baseline. Maternal cortisol continuously dropped post-M-SSC, but paternal cortisol increased post-P-SSC. Both mothers' and fathers' anxiety levels decreased during-SSC from baseline, and then increased post-SSC. Mother-father dyads also showed correlated or synchronized stress and anxiety responses in the NICU.

CONCLUSION:

M-SSC and P-SSC activated the oxytocin release and reduced stress and anxiety responses in mothers and fathers of pre-term infants.

PRACTICE IMPLICATIONS:

SSC plays a positive role in early post-partum period and patterns of maternal and paternal bio-behavioral responses to SSC with pre-term infants might be different.