Salivary Oxytocin During Kangaroo Care

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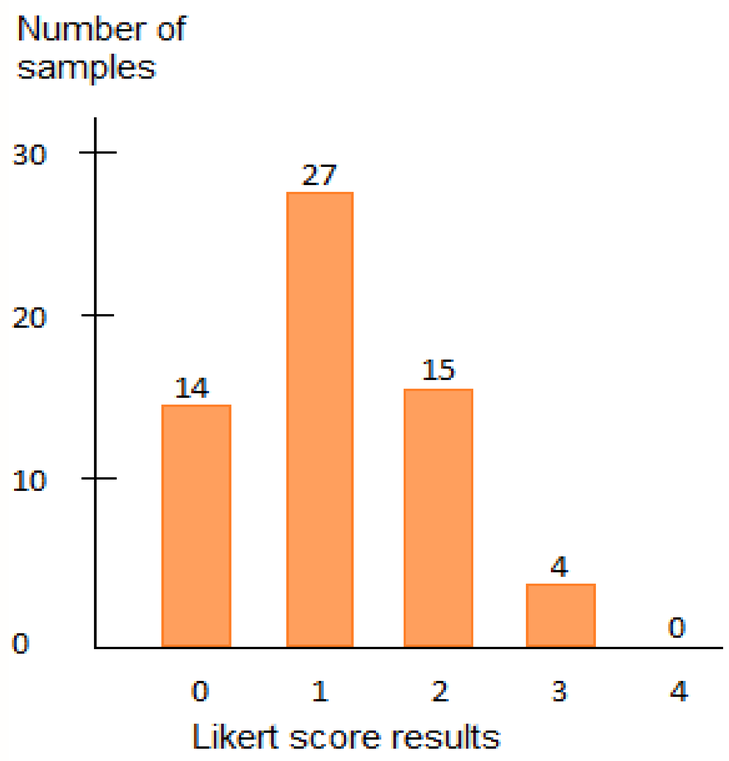
Introduction and goals

- It is still a great challenge to identify what could be negative stimuli for preterm infants and what could be positive stimuli
- However Kangaroo Care (KC) is a practice well known to have many positive effects, especially on parent-infant bonding
- Oxytocin (OT) is an important hormone for the process of bonding
- We hypothesize that OT would increase during KC in a large trial
- **A feasibility study** investigating the possibility and obtrusiveness of measuring saliva OT before and during KC is needed first
- OT may be used as a physiological marker for positive stimuli, thus study outcomes may be used to improve neonatal caregiving

Methodology

Saliva of 30 preterm infants (> 28 weeks gestational age) was collected prior to and during KC using cotton swabs. The saliva of multiple collections was pooled in order to reach a sufficient volume to measure oxytocin. Vials containing either before-KC-saliva or during-KC-saliva of the same group of infants were obtained. OT was measured using a radio-immuno-assay performed by RIAgnosis©. Obtrusiveness of the collection procedure was measured using a Likert-scale based on the *COMFORTNeo scale*.

Score	Definition
0	Continuously normal, relaxed facial expression according to COMFORTNeo
1	Totally relaxed facial expression for almost all of the time (minus ≈ 2 seconds)
2	Relaxed facial expression for most of the time (minus < 10 seconds)
3	A prolonged distressed facial expression (10 seconds)
4	Continuous intolerant expression or crying (abortion of the collection)



Results

As shown in the bar chart, obtrusiveness during the collections was negligible. In more than half of the collections the swab appeared not to be noticed anymore after two seconds (N = 41).

The saliva of 10 infants was required to obtain a vial containing the minimum volume necessary to measure OT.
The 30 infants in this study thus yielded 3 before-KC and 3 during-KC vials.

OT was detectable in all 6 vials (mean 0.9 pg/ml, SD +1.38 pg/ml). A 19% increase in [OT] was seen during KC (4.3 → 5.2 pg/ml).
A power calculation resulted in a required sample size of 21 before-KC and 21 during-KC vials in a future trial.

Conclusion

Oxytocin can be measured unobtrusively in the pooled saliva of preterm infants using a radio-immuno assay.