C2.1: Feeding Fatigue in Preterm Infants

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Abstract:
Introduction: Preterm infants may fall asleep, stop sucking, have changes in heart rate, breathing, or oxygen saturation, or may choke before taking adequate volume. There is little research about differences in these behaviors; such research may help distinguish between
normal feeding skill development and feeding fatigue. Fatigue, often considered a subjective symptom, has behavioral and physiological dimensions important to our understanding. The purpose of this analysis was to describe feeding fatigue in preterm infants.

**Method(s):** Participants were 95 preterm infants, 48 males and 47 females; 71% were Black. The mean birth weight was 1290 grams; the mean post-menstrual age (PMA) at birth was 29.3 weeks. In this non-experimental study, infants were observed once a day starting with the first oral feeding; 905 feedings were analyzed. Behavioral data (behavior state, feeding performance) were collected by observation; physiological data (sucking data, heart and respiratory rate, heart rate variability, oxygen saturation) were collected with a computerized system. IRB approval and parental informed written consent was obtained.

**Results:** There were 325 completed feedings (CF), 374 ended for no sucking (SSF), and 206 ended for fatigue (FF). FFs had higher pre-feeding heart rates, lower oxygen saturation, and less active behavior states. FFs were more likely in infants with the least oral feeding experience and with poor histories of oral feeding consumption. FFs had lower oxygen saturation during and after feeding and less active behavior states during feeding than CFs or SSFs. Both SSFs and FFs involved fewer sucks and suck bursts and shorter suck burst lengths than CFs. However, FFs had poor sympathetic to parasympathetic balance and faster feeding rates than SSFs.

**Discussion & Conclusions:** Feeding requires optimal physiologic functioning. For preterm infants, feeding also requires the ability to control sucking. In this analysis, when infants were more able to control sucking activity, they were more likely to complete the feeding or to stop feeding by not sucking. Possible interventions based on this analysis include assisting the infant in pacing the feeding and maintaining realistic expectations about feeding skill development.

**Abstract History:**
This abstract has not been presented or accepted for presentation in whole or in part at the SNRS or other scientific meeting.

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