C2.5: The Effect of Cycled Light on Time to Full Enteral Feedings in Premature Infants

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**Presentation Preference:** Research Abstract

**Abstract Categories:**
Thematic Areas: Perinatal/Neonatal/Infancy

**Abstract:**

**Introduction:** The goal for premature infants is to achieve full enteral feedings in the shortest amount of time. Cycled light in the neonatal intensive care environment may expedite time to full enteral feedings since cycled light is known to influence physiological processes through the development of circadian rhythms. The purpose of this study was to compare the effects of early verses late cycled lighting on infant’s time to full enteral feedings in infants born less than 28 weeks gestation.

**Method(s):** This study is a secondary analysis from a longitudinal study that randomized 121 premature infants within the first 48 hours of life to early or late cycled lighting. Infants were 23 to 28 weeks gestation and without neurological anomalies or visual problems. Infants in the early cycled light group experienced near darkness until 28 weeks and then were exposed to cycled light until discharge compared to infants in the late cycled light group who experienced near darkness until 36 weeks post-menstrual age and then were exposed to cycled light until discharge. Cycled light consisted of an 11-hour on and 11-hour off pattern with 2 hours left for nurses' lighting needs during shift change. Survival analysis was chosen to model time to full enteral feedings between early and late cycled light groups. In an initial model, non-proportionality was assessed and significant non-proportionality (p< .05) was present for the effect of birth weight. Therefore birth weight*days was used in the final model along with intervention group, race, gender, and birth weight.

**Results:** There was no significant difference on time to full enteral feedings between early and late cycled light groups. For every one gram increase in birth weight, days to full enteral feedings significantly increased by 0.009 (p < 0.001). Race and gender did not have an effect on time to full enteral feedings.

**Discussion & Conclusions:** Our findings did not show substantial benefit of early cycled light for premature infants born less than 28 weeks on time to full enteral feedings. These findings may be based on the immaturity of the circadian system influences on the gastrointestinal tract, the feeding standards of the study population, or the definition of full enteral feedings for this study.

**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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