Light in the NICU

Light

Lighting must be adequate to allow speedy and accurate assessments of unstable neonates but stable infants require periods of reduced lighting or darkness to promote sleep. Light to the intensity of 200 lux is acceptable office lighting, whereas 250-500 lux is recommended for ICU to allow for adequate observation and daytime procedural activity, dimming to 20 lux for night time or rest periods and 1000 lux for critical tasks.

There is some evidence that the brighter ambient light may cause alterations in normal biorhythm patterns and reduction in oxygen saturation. Other long-term sequelae of continuous bright lighting or continuous near darkness are not at this time known but cycled lighting may assist infants to self regulate. Emerging evidence remains inconclusive as to the whether the relationship between cycled lighting and the development of circadian rhythms is significant in the areas of weight gain and sleep-wake activity patterns, or simply an endogenous maturational process of the neurological and endocrine systems of the infant. There is a current Cochrane protocol researching the effects of 12 hour cycled light on growth for preterm infants at three and six months corrected gestational age, as a potential entraining signal for circadian rhythms.

It has been suggested however that cycled lighting is individualised and incorporated when collaborating with parents in teaching infant cues and discharge planning advice for the home environment, to promote optimal neonatal state organisation.

There has been conflicting evidence in the literature regarding bright ambient lighting and its role in the development of retinopathy of prematurity.

Aims

• Introduce cycled lighting into the nurseries.
• Avoid rapid changes in lighting.

Methods

- Place blankets over cribs.
- Small drape over the head and shoulders of unstable ventilated infants nursed on open care cots.
- Use dimmer switches for each cot in intensive care and high dependency areas.
- Optimise each infant’s sleep/wake patterns using dimmers and drapes.
- Use of cue based care to facilitate undisturbed rest periods.
- To cycle lighting that may assist with the development of circadian rhythms.
- Lights are dimmed during quiet time and at night.
- Rapid changes in ambient lighting should be avoided, use dimmers to increase and decrease lighting slowly.
Outcomes

- Cycled lighting provides systematic time cues.
- Infants have improved regulation of their sleep/wake states.

References


