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Co-Bedding Preterm Infants in the NICU

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Purpose

To determine if co-bedding preterm twins in the neonatal intensive care unit (NICU) will promote better self-regulation, quality of sleep, response to pain, weight gain, and safety when compared to the standard practice of placement in separate beds.

PICOT Statement

- Population: Stable preterm twins in the NICU
- Intervention: Co-bedding twins in incubators/cots
- Comparison: Placing infants separately in incubators or cots
- Outcome: The co-bedding twins will have improved infant outcomes
- Timeline: Length of NICU stay

Interventions

- In standard practice, twins are placed in separate incubators or cots and they are monitored based on individual needs
- The twins are monitored for pain, their ability to self-regulate, quality of sleep, weight gain, and temperature regulation along with other factors specific to each infant
- For the intervention, each twin is placed in the same incubator or cot together either skin-to-skin or swaddled
- Every twin is placed on cardiac monitoring, continuous pulse oximeter, and observed to determine activity
- They are also monitored separately based on individual need, but with the support from the other twin

Summary

- Co-bedding promotes self-regulation, quiet sleep, weight gain, decreases crying, and decreases pain in twin preterm infants
- Co-bedding is a comforting measure for infants that can be implemented without significant adverse effects and is a noninvasive solution to improving overall physiologic stability

Background

- Co-bedding is defined as caring for two or more infants in the same incubator/cot and is considered a developmental initiative to minimize adverse effects of preterm birth (Hayward et al., 2015).
- Sharing an environment in utero shows that twins exhibit the same sleep/wake cycles, circadian rhythms and coincide with each others movements.
- Enhancing close contact, like that of intrauterine life, in extrauterine life could enhance their success in adapting after birth.
- Coregulation is how newborn twins support each other in the transition to postnatal life and coregulation is mediated by physical contact.
- Maternal skin-to-skin contact has been shown to decrease pain responses of infants during procedures solely from the stabilization and regulation from direct skin contact (Campbell et al., 2009).
- Skin-to-skin contact has also shown improvements with regulation of temperature, which is crucial to infant stability.
- Essentially the intent of these studies is to evaluate the comfort level of twins in co-bedded environments versus those in separated environments.

Future of Co-bedding in the NICU Setting

- There is evidence to support the positive effect that co-bedding has on these premature twins. Further studies are recommended for ongoing verification of outcomes, but co-bedding should be implemented in the NICU based on the positive results.



Outcomes as Noted in Literature

- Twins that were co-bedded showed more time spent in the same state, behaviorally, than twins that were separated.
 - 50% in co-bedded versus 39% standard care
- The co-bedded twins also spent more time in quiet sleep and slept less time crying.
 - 25% in co-bedded verses 16% standard care
- Based on the premature infant pain profile (PIPP), co-bedding of the twins reduced their pain sensation.
 - Decreased from 9.5 in standard care to 7.9 in co-bedded
- The overall average weight was calculated to be higher in the infants that we co-bedded.
 - Co-bedded had an average weight gain of 70 grams more than standard care
- There was no significant difference noted between co-bedded twins and standard practice with safety of the infants based on temperature, heart rate, oxygen saturation, and signs of sepsis.

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