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Nursing Interventions: Comparing Nasal Aspiration Methods in Bronchiolitic Infants

Cindy Braeunig

Tower Health - Reading Hospital Department of Pediatric Emergency, cindy.braeunig@towerhealth.org

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Cindy Braeunig, BSN, RN, Pediatric Emergency Department | Reading Hospital, West Reading, PA | 2020 EBP Internship

Background/Problem

Bronchiolitis is a common viral infection that affects respiratory effort in pediatric patients resulting in hospitalizations. Nursing interventions for bronchiolitis are aimed at clearing nasal secretions. Superficial nasal suctioning and deep nasopharyngeal suctioning are two interventions utilized in the hospital environment. Practice variations among nursing staff warrant the exploration of the beneficial affects of non-invasive verses invasive suctioning methods.

PICO

P (Patient/Problem) = In infants (newborn to 24 months) with increased respiratory effort related to Bronchiolitis

I (Intervention) = non-invasive nasal suction

C (Comparison) = deep nasopharyngeal suction

O (Outcome) = decrease respiratory effort

Practice Question

In infants (newborn to 24 months) with increased respiratory effort related to Bronchiolitis does non-invasive nasal suctioning compared to deep nasopharyngeal suction decrease respiratory effort?

Evidence Summary: Strength and Quality of Evidence

JHN 1 (2 Sources, Quality A,B):

- Superficial nasal suctioning decreased respiratory efforts in patients with bronchiolitis and decreased hospitalization time from 142 ± 35 hours to a comparative hospitalization of 129 ± 40 hours. (P <0.049)
- Deep nasopharyngeal suctioning was associated with an increase in 6.7% of wheezing and 19.5% retractions post intervention. Less invasive nasal clearance provided significant (P <0.05) in heart rate post intervention.

JHN 3 (2 Sources, Quality B):

- *Short-term use of superficial or deep nasal suctioning does not cause adverse physiologic effects such as tachycardia, tachypnea or hypoxia. Both types of suctioning interventions resulted similarly with improvement of respiratory effort. (P = 0.59)*
- *The intervention of deep nasopharyngeal suctioning used more than 60% of the time increased length of stay during hospitalization from a mean of 1.75 days to 2.35 days.*

Recommendations for Change Based on Evidence Synthesis

It is suggested that the method of non-invasive nasal clearing be attempted first before moving to invasive efforts.

Translation of Evidence into Practice

Key Stakeholders:
ED Division Directors
ED Division CNS
ED Division Educators
ED Division Managers
ED Division Nursing Staff

To promote continued compliance of superficial nasal suction guidelines and provide annual education to direct care staff to maintain compliance of bronchiolitis guidelines.

Evaluation of Practice Change/Outcomes

Improvement of respiratory effort score documentation for bronchiolitis will be monitored through chart review.

Monitor compliance with initiation of bronchiolitis pathways and performance of nasal suction procedures.

Clinical Identification of Respiratory Effort in Pediatrics:

Breath Sounds
Dyspnea
Respiratory Rate
Presence of Retractions

Database Search Strategy

PubMed, CINAHL, Google Scholar

Keywords

Infant, Newborn, Bronchiolitis, RSV, Respiratory Syncytial Virus, Nose, Nasal Cavity, Nasal Suction, Nasopharyx, Tachypnea, Nasal Aspirate

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