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Umbilical Cord Care: Cord Detachment and Prevention of Infection

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PATIENT CARE ISSUE

- There are nearly 4 million neonatal deaths worldwide each year, with one-third of those related to infections (6)
- The longer the umbilical cord remains attached, the more likely an infection will develop
- Uneducated guardians may utilize improper cleaning techniques, which increases infection rates
- Guardians desire to know the best method of care for their neonate

EVIDENCE-BASED PRACTICE QUESTION

Question:

- P - population:** newborns from birth to 1 month old
I - intervention: chlorhexidine
C - comparisons: alcohol, dry-care, olive oil, chlorhexidine
O - outcome: to determine the fastest method of umbilical cord detachment without any associated infections

REGISTERED NURSE INTERVIEW

- Springfield Regional Medical Center, located in Springfield, Ohio
- All healthcare providers clean the umbilical cord with an alcohol swab every time the infant's diaper is changed
- The policy also includes the guidelines to fold down the neonate's diaper in order to avoid covering the umbilical cord
- No patient education pamphlet is available at this time

METHODS

- Databases:** PubMed, Medscape, World Health Organization, academic journals
Keywords: umbilical cord care, chlorhexidine infant umbilical, infant umbilical cord care, umbilical cord
Secondary keywords: alcohol, dry care, methods, clinical trials
Inclusion criteria: academic integrity, high level of evidence, authorial credentials, relation of the articles' topics to the subject of research, significant data synthesized regarding time and separation rate, studies with high validity and reliability coefficients
Exclusion criteria: poor authorial credentials, inclusion of cleansing methods other than those addressed in this review, unreliable study outcomes

EVIDENCE-BASED PRACTICE RECOMMENDATIONS

Based upon the results we found through our research, we would encourage Springfield Regional Medical Center to update their practices in the area of umbilical care. The use of an alcohol swab as a cleanser should be replaced by the use of chlorhexidine in order to produce faster cord separation times and reduce the rate of infection in neonates. We would also suggest better parent teaching and some form of written guidelines to give to the guardians.

SYNTHESIS OF EVIDENCE

Alcohol

Study conducted at Salinas Valley Memorial Hospital (9):

- 1876 neonate participants
- average cord separation time with natural drying was 8.16 days, while alcohol was 9.8 days
- $p=0.001$

Dry Care

Study conducted at a private hospital in Southern Argentina (HPS) (2):

- 362 neonate participants
- use of water and mild/neutral soap
- average cord separation time with natural drying was 6 days, while alcohol was 7 days
- $p<0.001$
- no difference in rates of infection were noted between the two groups

Olive Oil

Study conducted in Turkey (4):

- 150 neonate participants
- average cord separation time with the olive oil treatment was 9.1 days, while natural drying was 9.8 days
- $p>0.05$, so the difference in time is statistically insignificant
- olive oil was found to have good antimicrobial effects on the umbilicus

Chlorhexidine

Study conducted at The Hospital for Children and Adolescents at the University of Leipzig (5):

- average cord separation time with chlorhexidine was 7.0 days, while natural drying was 7.8 days
- chlorhexidine has a lower rate of adverse effects and rates of infection than all other cleansing agents

RESULTS

Through our study we found that the best method of cleansing for the neonate's umbilicus is chlorhexidine. Second to chlorhexidine is the use of dry care, followed by the use of an alcohol swab, and finally, olive oil. Chlorhexidine is the best at prevention of infections and has the fastest cord separation time.

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