



Topic Expert Group: Patient safety and hygiene practice

Prevention of necrotising enterocolitis (NEC)

Manzoni P, Tissières P, Helder O, Borghesi A

Target group

Very preterm infants and parents

User group

Healthcare professionals, neonatal units, hospitals, and health services

Statement of standard

Neonatal services implement bundles of care designed to prevent necrotising enterocolitis (NEC).

Rationale

Necrotising enterocolitis (NEC) is a devastating bowel disease affecting approximately 7% of very preterm infants. It is associated with increased mortality, serious neonatal morbidity, prolonged NICU stay, high costs, late neurodevelopmental impairment, and decreased quality of life in survivors. (1–5)

The pathogenesis of NEC is multifactorial, including gut immaturity, infection, enteric colonisation by pathogens, and local vascular injury, in the presence of milk. (1–4) Risk factors include absence or limited exposure to human milk, either donor or maternal (6,7), exposure to inhibitors of gastric acidity (8,9), and exposure to cow-milk derived proteins provided as fortifier (6), or as formula milk (7). Changes in the daily increase in the amount of enteral feeding or packed red blood cells transfusion have not been directly related to the onset of NEC. (10,11)

A limited number of strategies have proven effective in reducing the prevalence of the most severe stages of NEC (5), including human milk (7), and potentially probiotics (12–14) and bovine Lactoferrin (15). It is likely that only multifaceted, comprehensive strategies will consistently lead to the prevention of NEC.

Benefits

Short-term benefit

- Reduced risk of NEC and comorbidity (6,7,13)
- Reduced mortality (16)

Long-term benefits

- Reduced risk of poor neurodevelopmental outcome (16,17)
- Reduced risk of poor nutritional outcome including impaired growth and dependence on nutritional devices (consensus)
- Reduced healthcare costs (consensus)



Components of the standard

Component	Grading of evidence	Indicator of meeting the standard
For parents and family		
1. Parents are informed by healthcare professionals about the benefits of human milk feeding. (7)	A (High quality) B (High quality)	Patient information sheet
2. Mothers are instructed about how to early initiate expressing breast milk. (18) (see TEG Nutrition)	A (High quality)	Parent feedback
3. Parents are instructed by healthcare professionals about the need for hand hygiene to reduce the risk of nosocomial infections. (see TEG Patient safety & hygiene practice)	B (Moderate quality)	Patient information sheet, training documentation
For healthcare professionals		
4. A unit guideline on the implementation of bundles of care designed to prevent necrotising enterocolitis (NEC) is adhered to by all healthcare professionals.	B (High quality)	Guideline
5. Own mother's milk is used where available, donor milk is substituted if necessary. (3,7)	A (High quality)	Clinical records, guideline
6. Probiotics are recommended. (12,13)	A (High quality)	Guideline
7. Inhibitors of gastric acidity (H2-blockers, proton pump inhibitors, etc.) are avoided. (8,9)	A (High quality)	Guideline
For neonatal unit		
8. A unit guideline on the implementation of bundles of care designed to prevent NEC is available and regularly updated.	B (High quality)	Guideline
9. The proportion of very preterm infants who develop NEC is audited.	B (High quality)	Audit report
For health service		
10. A national guideline on the implementation of bundles of care designed to prevent NEC is available and regularly updated.	B (High quality)	Guideline



11. Human milk banks are available. (19) A (High quality) Audit report

Where to go – further development of care

Further development	Grading of evidence
For parents and family	
N/A	
For healthcare professionals and neonatal unit	
• Define the optimal probiotic to be used in the NICU.	B (Low quality)
For hospital	
• Ensure availability of own mother's milk and donor milk. (19)	A (High quality)
For health service	
N/A	

Getting started

Initial steps

For parents and family

- Parents are verbally instructed by healthcare professionals about the importance of the use of own mother's milk where available and in the benefits of donor milk as a substitute.

For healthcare professionals

- Monitor the proportion of very preterm infants who develop necrotising enterocolitis (NEC).

For neonatal unit

- Develop and implement a unit guideline on bundles for prevention practices for NEC.
- Develop information material about the benefits of human milk feeding and the need for hand hygiene for parents.

For hospital

- Provide donor milk supply. (see TEG Nutrition)

For health service

- Develop and implement a national guideline on the implementation of bundles of care designed to prevent NEC.

Source

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