

## Technical Bulletin

# Prevention of late-onset sepsis including the use of an exclusive human milk diet

The very low birth weight (VLBW), less than 1500 g, preterm population is at high risk for healthcare-associated infection (HAI) due to biological risk factors such as an immature immune system, poor skin integrity, prolonged use of vascular access devices, and limitations in providing enteral nutrition.<sup>1,2</sup>

Use of an exclusive human milk diet (EHMD) in the VLBW population has been associated with decreased central line days, earlier full enteral feeding tolerance, and less late-onset infection including central line-associated bloodstream infections (CLABSI).<sup>3,4</sup> The number of sepsis-related clinical evaluations are also reduced by the use of an EHMD.<sup>2</sup> Studies show a dose response relationship between the amount of human milk received and the risk of sepsis.<sup>4</sup> Abrams et al showed that for each 10% increase in intake of other than an EHMD there was a 17.9% increased risk of late-onset sepsis (95% CI, 8.8-27.8%).<sup>5</sup> Providing an EHMD in combination with best practices for infection prevention may help reduce the risk of sepsis in this vulnerable population.

### NPAC Recommendations:

#### Establish and adhere to an HAI intervention bundle based on best practices to protect infants from hospital-borne pathogens<sup>6,7,8</sup>

- Support and monitor appropriate hand hygiene and personal protection equipment standards
- Implement maximum sterile barrier precautions for all central line placement
- Use chlorhexidine gluconate for skin antisepsis when age appropriate<sup>9</sup>
- Implement daily central line dressing assessment
- Minimize line access
- Provide needless port protection and judicious hub care for all vascular access lines such as the “Scrub the Hub” campaign from The Joint Commission<sup>10</sup>
- Investigate and analyze every positive blood culture

#### Initiate early aggressive enteral nutrition with colostrum and human milk<sup>2,6,11</sup>

- Begin early oral immune therapy using mom’s colostrum<sup>4</sup>
- Prioritize the use of fresh colostrum and mother’s own milk<sup>4,5</sup>
- Establish early trophic feedings and aggressive enteral nutrition<sup>12</sup>

#### Promote early removal of central line<sup>10</sup>

- Establish and adhere to a feeding protocol
- Assess and document central line catheter need daily
- Provide early nutrient fortification with human milk-derived fortifiers and monitor feeding advancement<sup>12</sup>
- Remove vascular access device when enteral feeds reach ~120 mL/kg/day
- Adhere to an EHMD until 34 weeks corrected age (CA)

#### Antibiotic stewardship<sup>6</sup>

- Limit extended exposure to empiric broad spectrum antibiotics without confirmed laboratory evidence of infection
- Neonatal antibiotic use may alter the neonatal microbiome and lead to gut dysbiosis which may increase the risk for late-onset infection, necrotizing enterocolitis, and mortality

*This document is intended to provide general information for healthcare providers in the use of an EHMD for infants less than 1250 g birth weight. The information within is the collective opinion of the Nursing Practice Advisory Council (NPAC), a committee sponsored by Prolacta Bioscience. As with all guidelines, appropriate medical judgement should be exercised. Be sure to review your clinical experience and outcomes around the management of nutrition in VLBW infants.*

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