

## Neonatal NEC Update

### Objectives

- Relate recent advances in research regarding necrotizing enterocolitis in the neonate to potential strategies supportive of improvements in clinical practice
- Describe the scoping review findings examining etiological pathways to NEC development in very preterm infants with focused interest on variables around packed red blood cell (PRBC) transfusions
- Contrast the differences and similarities in characteristics as potential evidence of different entities between necrotizing enterocolitis developing in the preterm infant and the disease course in the term infant with congenital heart disease

### Content Outline

1. Necrotizing Enterocolitis (NEC) Research Advances
  - 1.1 Overview of current understanding of NEC as a disease including changes and remodeling aspects
  - 1.2 Research and strategies involving microbiome and biotics as well as integration of microbiome, proteome, metabolome, and epigenome data
  - 1.3 Immunomodulation to address inflammatory and related aspects
  - 1.4 Biomarkers for use in early diagnosis and monitoring
2. Examining NEC Etiological Pathways in Very Preterm Infants
  - 2.1 Literature review to examine potential impact of variables of interest on the development of NEC in the very preterm infant population
  - 2.2 Methods, results, and discussion of scoping literature review findings
3. Comparison of NEC Occurring in Preterm Infants to NEC Developing in Infants with Congenital Heart Disease Using Retrospective Case-Control Study Findings
  - 3.1 Materials, methods, and results of study
  - 3.2 Types of congenital heart disease
  - 3.3 Patient demographic data
  - 3.4 Characteristics of disease and outcomes including clinical parameters, laboratory values, lesion locations and presence of a PDA
  - 3.5 Discussion of study findings and conclusions

### Reading Material Resources

**Module WB2261: Neonatal NEC Update** is based on the resources listed below. A copy of each resource is included with the module.

Recent Advances in Necrotizing Enterocolitis Research-Strategies for Implementation in Clinical Practice, Pammi M, et al., *Clinics in Perinatology*, 47 (2020), 383-397

Examining etiological pathways to necrotizing enterocolitis in very preterm infants, Everhart KC et al., *Journal of Neonatal Nursing*, 27 (2021), 77-81

Necrotizing Enterocolitis Associated with Congenital Heart Disease: a Different Entity? Bubberman JM et al., *Journal of Pediatric Surgery*, 54 (2019), 1755-1760