

## Objectives

- Identify treatment options for hyperbilirubinemia
- Discuss the three phases of bilirubin encephalopathy
- Understand the glucose production and utilization in a neonate
- Be able to differentiate between the amino acid and metabolic disorders including their pathophysiology, presentation and management
- Describe the relationship between leucine and the management for Organic acid disorders

## Metabolic Encephalopathy

### Content Outline

1. Introduction to Metabolic Encephalopathy
2. Hyperbilirubinemia
  - A. Incidence
  - B. prevention and treatment
  - C. Pathophysiology
  - D. Presentation
  - E. Diagnosis and prognosis
3. Hypoglycemia
  - A. Genetic, metabolic, and endocrine conditions
  - B. Pathophysiology
  - C. Diagnosis and management
4. Inborn Errors of Metabolism
  - A. Amino acid metabolism disorders including Maple Syrup Urine Disease (MSUD), Phenylketonuria (PKU), Non-Ketotic Hyperglycinemia (NKH), Homocystinuria, Glutaric Acidemia Type-1 (GL1), and Tyrosinemia
  - B. Organic acid disorders including 3-Methyl Crotonyl-CoA carboxylase deficiency (3MCC), Beta-Ketothiolase Deficiency (BKT), Isovaleric Acidemia (IVA), Multiple Carboxylase Deficiency (MCD), Propionic Acidemia (PROP) and Methylmalonic Acidemia
  - C. Table 10-1 Neurological Presentation of Inborn Errors of Metabolism
5. Newborn Metabolic Screen
6. Conclusion

### Reading Material Resources

**NI29110: Metabolic Encephalopathy by Laura Marie Eley Orr, NNP-BC** is based on the resource listed below. A copy of the resource is included with the module.

Handbook of Neonatal Neurology, Bissinger, et al., The National Certification Corporation (NCC), 2024, Chapter 10, 187-210