

Hypoxic-Ischemic Injury in Term Neonates

Objectives

- State known clinical risk factors for hypoxic-ischemic cerebral injury & relate the significance of early recognition of peripartum hypoxic-ischemic injury to initiation of available therapeutic interventions such as hypothermia
- Outline the temporal evolution of the neonatal neurological syndrome and recognize the importance of findings from the neurological examination and supportive laboratory results
- Describe the types of neuroimaging & neurodiagnostics available for identifying the spectrum of cerebral changes that can occur in hypoxic-ischemic encephalopathy (HIE) and relate the topography of the neuropathological lesions observed to short-and long-term clinical correlates & prognoses
- Summarize the current & evolving approaches presented for stabilization & management of infants with neonatal hypoxic-ischemic encephalopathy (HIE)

Content Outline

1. Recognition & Management of Hypoxic-Ischemic Injury in the Term Infant
 - 1.1 Prevention of peripartum hypoxic-ischemic injury
 - 1.1.1 Use of antepartum assessment, fetal monitoring (EFM, blood sampling)
 - 1.1.2 Initiation of appropriate interventions such as cesarean section
 - 1.2 Recognition of peripartum hypoxic-ischemic injury
 - 1.2.1 Maternal risk factors
 - 1.2.2 Clinical features & involvement of multiple organ systems
 - 1.2.3 Use of standardized scoring systems
 - 1.2.4 Role of neuroimaging & neurodiagnostics
 - 1.3 Stabilization of systemic physiology
 - 1.3.1 Maintenance of adequate ventilation, perfusion & glucose levels
 - 1.3.2 Control of seizures
 - 1.3.3 Initiation of neuroprotective interventions such as hypothermia
 - 1.4 Estimating Prognosis
 - 1.4.1 Presence & severity of neonatal neurological syndrome
 - 1.4.2 Impact of seizures
 - 1.4.3 Role of Apgar scoring systems, key resuscitation variables
 - 1.4.4 Non-neurological aspects

Reading Material Resources

Module WB2205: Hypoxic-Ischemic is based on the resource listed below. A copy of the resource is included with the module.

Chapter 20 Hypoxic-Ischemic Injury in the Term Infant: Clinical-Neurological Features, Diagnosis, Imaging, Prognosis, Therapy, Inder TE and Volpe JJ in Volpe's Neurology of the Newborn 6th ed., (2018), Elsevier, 510-563