Preeclampsia: Neurologic Consequences

Objectives

- Discuss the maladaptations in cerebral autoregulation, myogenic reactivity, and blood brain barrier function in preeclampsia
- Identify the neuropsychiatric, cognitive, neurologic and brain structure abnormalities that can result in the fetus/neonate from in utero exposure to preeclampsia
- Review the prevailing research mechanisms and animal models relative to the effects of preeclampsia on the fetus and neonate

Content Outline

1. Neuropathophysiology of Preeclampsia and Eclampsia
   - A. Cerebral autoregulation
   - B. Blood barrier permeability
   - C. Proinflammatory state
2. Neurologic Consequences of Preeclampsia in the Fetus and Neonate
   - A. Neuropsychiatric outcomes
   - B. Cognitive outcomes
   - C. Neurological outcomes
   - D. Brain abnormalities
3. Studies and Research
   - A. Animal models
   - B. Modeling underlying mechanisms
     1. Angiogenic dysfunction
     2. Placental ischemia
     3. Immunovascular dysfunction

Reading Material Resources

Module WB2318: Preeclampsia: Neurologic Consequences is based on the resources listed below. A copy of each resource is included with the module.

Neuropathophysiology of preeclampsia and eclampsia: A review of cerebral hemodynamic principles in hypertensive disorders of pregnancy, Mahendra, et al., Pregnancy Hypertension: An International Journal of Women's Cardiovascular Health, 23 (2021), 104-111

Neurodevelopmental Outcomes of Prenatal Preeclampsia Exposure, Gumusoglu, et al., Trends in Neurosciences, Vol. 43, No. 4, April 2020, 253-265