

Editor's Pick in May 2023

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The *Journal of Korean Neurosurgical Society (JKNS): Pediatric Issue* has been published annually from 2015. The topic of the *Pediatric Issue* in 2023 is 'Intraventricular hemorrhage (IVH) and posthemorrhagic hydrocephalus (PHH) in preterm infants', which was organized by the issue's invited editor, Professor Young-Soo Park, a world famous neurosurgeon in the field.

The editorial board has carefully selected two informative papers from this *JKNS: Pediatric Issue*, both of which provide valuable insights into the diagnosis and management of IVH in preterm infants. These publications offer well-organized and comprehensive analyses of the latest research, which we believe will be of great interest to our readers and serve as an important resource for clinicians and researchers alike.

Pathogenesis and Prevention of IVH in Preterm Infants⁴⁾

Significant advances in perinatal and neonatal care have improved survival rates and long-term clinical outcome for preterm infants. Paradoxically, the decrease in mortality rates of preterm infants has led to an increasing number of cases of IVH and higher health care costs¹⁾. Since IVH in preterm infants is related to conditions from prenatal management, delivery, and postnatal care, a vast number of studies have been

conducted on this topic. It should be noted that the morbidity of preterm infants leads to a lifelong medical burden. Therefore, the prevention of IVH is of paramount importance.

From a neonatologist's point of view, the authors conducted a comprehensive review on the pathogenesis and perinatal care to prevent IVH. This review provides an integrated insight into the multifactorial pathogenesis of IVH in preterm infants with an evidence-based preventive measures. The importance of circulatory management and consideration of congenital heart is emphasized.

This review can improve the understanding of IVH in preterm infants among neurosurgeons, neonatologists and obstetricians in the field. Moreover, with recent advances in non-invasive monitoring⁶⁾, this study is expected to lead to future evidence for individualized cerebral and systemic hemodynamic monitoring in preterm infants.

Neuroimaging of germinal matrix and IVH in premature infants⁵⁾

Premature infants are at significantly higher risk of developing hypoxic-ischemic injury, germinal matrix and IVH (GM-IVH), periventricular leukomalacia, and post-hemorrhagic ventricular dilatation (PHVD). Cranial ultrasound (cUS) has become an essential tool for diagnosing and serial monitoring

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these brain injuries. cUS is more widely used because it offers advantages such as cost-effectiveness, diagnostic utility, and convenience that can be used at the bedside in real-time²⁾. It has become an essential tool for physicians and surgeons dealing with pediatric patients.

The authors comprehensively reviewed the role of cUS and magnetic resonance imaging (MRI) in premature infants and various key imaging findings of GM-IVH and PHVD. They presented the appropriate timing of cUS and detailed imaging findings of cUS and MRI according to GM-IVH grade. Ventricular measurements on imaging to predict PHVD were also described in detail.

The importance of early recognition of PHVD on imaging has been suggested in many literature³⁾. The authors also emphasized the importance of early intervention in patients with PHVD for better neurodevelopmental outcomes. This study provides a comprehensive and thorough review of imaging findings that can be helpful in the actual clinical environment. It is believed that this study will guide many neurosurgeons, radiologists, and neonatologists to utilize cUS and MRI for the diagnosis and treatment of GM-IVH and PHVD.

AUTHORS' DECLARATION

Conflicts of interest

No other potential conflict of interest relevant to this article was reported.

Author contributions

Conceptualization : CYK, SKK; Data curation : CYK; Formal analysis : CYK; Project administration : CYY, SKK; Writing - original draft : CYK, SKK; Writing - review & editing : CYK, SKK

Data sharing

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