

HEADACHE AND SLEEP DISORDERS

Investigators from Sapienza University, Italy, studied the prevalence and treatment of sleep disorders in children with migraine. Treatment of insomnia, sleep apnea, sleep bruxism and restless legs syndrome often leads to improvement of migraine. Prodromal symptoms of migraine (yawning, drowsiness, irritability, mood changes, hyperactivity) support a direct role for the dopaminergic system that is also involved in sleep-related movement disorders. Child education and lifestyle modification including sleep hygiene have a significant role in the management of migraine. Comorbid sleep disorders should be screened in children with migraine. (Guidetti V, Dosi C, Bruni O. Sleep and headache in children: specific pattern in migraine, implication for the treatment. **Cephalalgia** 2014 Jun 27. [Epub ahead of print]).

COMMENTARY. The association of migraine and sleep disorders, especially restless legs syndrome, is discussed by another Italian group of investigators [1].

References.

1. Cevoli S, et al. *Neurol Sci.* 2012 May;33 Suppl 1:S43-6.

VASCULAR DISORDERS

PERIVENTRICULAR HEMORRHAGIC INFARCTION (PVHI) OR PERIVENTRICULAR LEUKOMALACIA (PVL)

Investigators from Okazaki City Hospital, and other centers in Japan retrospectively evaluated the clinical features, ultrasonography, and EEG findings in 22 preterm infants with PVHI and 49 with PVL. Gestational age and birth weight were significantly lower in infants with PVHI than those with PVL. EEGs performed serially beginning immediately after birth were normal in the majority of infants with PVHI on days 1-2. EEG abnormalities appeared after ultrasonography abnormalities. The majority of infants with PVL (28 (85%) of 33) showed acute-stage EEG abnormalities on days 1-2. Acute-stage EEG abnormalities were more frequent in infants with PVHI than in those with PVL on days 5-14 ($p < 0.05$). The rate of infants with acute-stage EEG abnormalities decreased with age, whereas the rate of infants with chronic-stage EEG abnormalities increased with age. Normal EEG before ultrasonography abnormalities was more common in infants with PVHI than in those with PVL. PVHI causes mostly postnatal injury, whereas PVL is presumed to cause mostly pre- or perinatal injury. (Tsuji T, Okumura A, Kidokoro H, et al. Differences between periventricular hemorrhagic infarction and periventricular leukomalacia. **Brain Dev** 2014 Aug;36(7):555-62).

COMMENTARY. PVHI and PVL are well-defined white matter injuries in preterm infants that are accompanied by neurological sequelae. Cranial ultrasonography (US) in infants with PVHI shows periventricular intraparenchymal echodensity (IPE) at 1-3 days after birth, whereas cystic changes in deep white matter are seen in infants with cystic PVL at 1-3 weeks.

Ultrasound vs MRI for detecting intracranial hemorrhage in preterm neonates.

Investigators at Johns Hopkins Hospital studied 12 premature neonates with a mean gestational age of 32 weeks, comparing US and MRI for detection of grade I-III germinal matrix hemorrhage (GMH) and PVH. US had high sensitivity (100%) and specificity (93%) in detecting grade III GMH but poor sensitivity (0%) in detection of intraventricular hemorrhage (grade II GMH). US is first line of imaging for brain injury in the evaluation of premature neonates with suspected intracranial hemorrhage, but usefulness of MRI and susceptibility-weighted imaging for predicting long-term neurological outcome remains to be determined [1].

References.

1. Intrapiromkul J, et al. *J Neuroradiol.* 2013 May;40(2):81-8.

AUTOIMMUNE DISORDERS

RITUXIMAB IN AUTOIMMUNE CNS DISEASE

Investigators at University of Sydney, Australia, and 14 international centers assessed the utility and safety of rituximab in 144 children (median age 8 years, range 0.7-17; 103 female) with autoimmune and inflammatory disorders of the CNS. These included NMDAR encephalitis in 39 patients, opsoclonus myoclonus ataxia syndrome in 32, neuromyelitis optica spectrum disorder in 20, lupus erythematosus in 18, and other neuroinflammatory disorders in 35. A standardized questionnaire and Rankin Scale were used for a retrospective evaluation of treatment outcome. Infusion adverse events occurred in 18/144 (12.5%), including anaphylaxis in 3, and infection in 11 (7.6%), 2 of whom died. Benefit was reported in 125 (87%) patients, greater in patients treated early. The off-label use of rituximab should be restricted to disorders having significant morbidity and mortality. (Dale RC, et al. Utility and safety of rituximab in pediatric autoimmune and inflammatory CNS disease. *Neurology* 2014 Jul 8;83(2):142-50).

COMMENTARY. Suggested guidelines for rituximab treatment in children with neuroimmunologic conditions are listed in an editorial [1]. Originally approved by the FDA in 1997 for the treatment of B-cell non-Hodgkin lymphoma and later for rheumatoid arthritis, more recently it has been used in a variety of autoimmune disorders including multiple sclerosis.

References.

1. Chitnis T, Waubant E. *Neurology.* 2014 Jul 8;83(2):111-2.

ENCEPHALITIS / ENCEPHALOPATHY

DYSPLASTIC NEURONS IN OVARIAN TERATOMAS IN NMDAR ENCEPHALITIS

Investigators at University of Toronto, Canada, report detection of atypical (dysplastic) neuronal elements in 4 of 5 teratomas resected from cases with NMDAR