

levetiracetam; conflicting data concerning propranolol and trazodone; and pizotifen, nimodipine, and clonidine – no effect demonstrated. For children > 6 yrs, ibuprofen or acetaminophen may be considered for relief of acute migraine, and for adolescents > 12 yrs, sumatriptan nasal spray may be recommended for acute treatment. In the United States, preventive therapy recommended for migraine is of unproven value; flunarizine may be considered but is not available. (Lewis D, Ashwal S, Hershey A, et al. Practice parameter: Pharmacological treatment of migraine headache in children and adolescents. Report of the American Academy of Neurology Quality Standards Subcommittee and Practice Committee of the Child Neurology Society. *Neurology* December (2 of 2) 2004;63:2215-2224). (Reprints: American Academy of Neurology, 1080 Montreal Ave, St Paul, MN 55116).

COMMENT. Evidence available in published reports provides insufficient data to make general recommendations for the preventive therapy of childhood migraine. Except for the calcium channel blocker, flunarizine, which is unavailable in the US and which showed significant benefit in one double-blind, placebo-controlled, crossover trial, trials of antiepileptic medications, antidepressants, antihistamines, and antihypertensive agents have provided insufficient data, conflicting results, or have failed to demonstrate an effect.

Non-steroidal anti-inflammatory agents are effective in treatment of acute attacks of migraine in young children, and sumatriptan nasal spray may be used in adolescents. Standardized criteria are needed for the diagnosis of migraine in children, and multicentered, placebo-controlled clinical trials are essential to adjust for the high placebo response rate encountered in this age group. Failure to investigate and avoid dietary and other headache triggers is a frequent explanation for excessive use of medications (Millichap JG, Yee MM. *Pediatr Neurol* 2003;28:9-15).

***Petasites hybridus* root (butterbur) is an effective preventive treatment for migraine in adults** (ages 18 to 65) (Lipton RB, et al. *Neurology* 2004;63:2240-2244). Over 4 months of treatment, migraine attack frequency was reduced by 48% for Petasites extract 75 mg bid ($p=0.0012$ vs placebo). Apart from mild gastrointestinal symptoms, predominantly burping, no side effects were related to the treatment. In the US, Petasites extract is marketed as a food supplement (Petadolex). The authors caution that only the commercially available preparation of the herb extract should be taken internally. Feverfew has also been tested in controlled trials as a prophylactic migraine therapy (Murphy JJ et al. *Lancet* 1988;2:189-192).

INFECTIOUS DISORDERS

STROKE AS SEQUEL TO VARICELLA VACCINATION

Two children, ages 18 months and 14 months, who presented with acute hemiparesis 5 days and 3 weeks following varicella vaccination are reported from Alberta Children's Hospital, and the University of Calgary, Ontario, Canada. CT and MRI showed unilateral infarction of the basal ganglia and internal capsule in both patients. MRA showed narrowing of the mid-M1 segment of the right middle cerebral artery in one patient. Echocardiography in both patients showed a small patent foramen ovale with left to right shunting. One patient had a severe iron-deficiency anemia. At 1 year follow-up in one patient, the neurologic

examination was normal, and at 6 months in the other patient, hemiparesis was improved. Possible causes for the stroke included varicella angiopathy, small patent foramen ovale, and iron-deficiency anemia. (Wirrell E, Hill MD, Jadavji T, et al. Stroke after varicella vaccination. **J Pediatr** Dec 2004;145:845-847). (Reprints: Elaine Wirrell MD, FRCP(C), Division of Pediatric Neurology, Alberta Children's Hospital, 1820 Richmond Rd SW, Calgary, AB Canada T2T 5C7).

COMMENT. Acute hemiplegia with lacunar stroke has previously been reported after primary varicella infection (Eda I et al. **Brain Dev** 1983;5:494-499). The above case-reports are the first evidence of cerebral vasculopathy and stroke secondary to varicella vaccine. Patent foramen ovale and iron deficiency anemia were possible predisposing factors. Other neurological complications occurring in temporal association with varicella vaccination have included encephalitis, seizures, neuropathy, and ataxia (American Academy of Pediatrics **Red Book** 2000;25thed;633). Acute cerebellar ataxia was reported in a 2 year-old boy who developed vomiting and ataxia 10 days after vaccination. MRI showed multiple demyelinating lesions. Recovery followed in 3 weeks. (Sunaga Y et al. **Pediatr Neurol** 1995;13:340-342; **Ped Neur Briefs** Feb 1996). The neurology of the varicella-zoster virus is described in a historical perspective (Nogueira RG, Traynor B. **Arch Neurol** Dec 2004;61:1974-1977). VZV was first isolated in 1952, using fluorescent-labeled antibodies (Weller T, Stoddard M. **J Immunol** 68:311-319).

Zoster-associated intracranial hypertension is reported in a 14-year-old girl who presented with headache, vomiting, papilledema, CSF pleocytosis and elevated protein, and herpes zoster with positive VZV DNA in the CSF. The patient had a history of varicella at 4 years of age. Intracranial hypertension is an unusual complication of the reactivation of varicella-zoster virus. (Millichap JJ, Freeman JL. **Pediatr Neurol** 2005;32: in press).

STREPTOCOCCAL SUBDURAL EMPYEMA AS A COMPLICATION OF VARICELLA

A 3-month-old male infant who presented with a group A streptococcal subdural empyema on day 5 of a varicella skin rash is reported from the University of British Columbia, Vancouver, BC, Canada. On day 1 of the rash, he had decreased appetite and vomited twice, on day 2, fever, and on day 4, otitis media. On day 5, he developed right-sided focal seizures with ocular deviation and generalized status epilepticus. CT showed bilateral subdural fluid collections, maximal left. A 5-year-old sibling had developed uncomplicated varicella 2 weeks earlier. On admission to BC Children's Hospital, the varicella rash was diffuse, without secondary bacterial infection. He was irritable, his fontanelle was bulging, and his fundi showed papilledema. Lumbar puncture was not done because of skin lesions and intracranial hypertension. MRI findings were consistent with subdural empyema. A subdural tap yielded 55 ml of purulent fluid with *Streptococcus pyogenes*, susceptible to penicillin. After 2 weeks treatment with iv. penicillin, focal seizures recurred and he had developed a right-sided hemiparesis with increased size of the left subdural effusion. A subdural empyema was drained at craniotomy. The CSF smears and cultures were negative. Treatment with cefotaxime, vancomycin, and penicillin G was followed by resolution of the subdural empyema, sterile cultures, and slow improvement of