the criteria for diagnosis of Rett syndrome, head circumference at birth, perinatal period, and the first 6 months development may not be normal. (Leonard H, Bower C. Is the girl with Rett syndrome normal at birth? Dev Med Child Neurol Feb 1998;40:115-121).

## HEREDO-DEGENERATIVE DISEASES

### CLINICAL, MRI, AND GENETIC FINDINGS IN BATTEN DISEASE

The correlation of clinical, MRI and genetic factors in 36 patients with Batten disease (juvenile-onset neuronal ceroid lipofuscinosis) followed up for 25 years is reported from the Department of Paediatric Neurology, University of Helsinki, Finland, and other centers. Twenty seven patients were homozygous and 9 were heterozygous for the major mutation, a 1.02-kb deletion. All patients had vacuolated lymphocytes and positive rectal biopsy findings on the electron microscope. Visual failure occurred at a mean age of 5.8 years (range, 4-10 years) in all patients, and blindness developed between 6 and 20 years of age. Epilepsy began at 8 to 13 years in 92% of homozygous and 55% of heterozygous patients. Mental decline occurred slightly earlier (before 10 years in 50%) in homozygous patients than in heterozygous (mean age 12). Neurological and MRI changes were milder in heterozygotes. Parkinsonian signs were noted in 30% of homozygous patients between 12 and 15 years, and in 22% between 17 and 29 years. Extrapyramidal signs developed in only one heterozygous patient at 19 years. Speech failure correlated with onset of parkinsonism. Ataxia occurred in both homozygous and heterozygous patients before 15 years. Behavioral symptoms, aggression and depression, developed in 52% of homoygotes and 33% of heterozygotes. Death of homozygotes occurred at a mean age of 24 years (range, 10-28 years). MRI abnormalities in homozygotes, cerebral atrophy and gray/white matter ratio changes, developed after 10 years of age in homozygotes. The 1.02-kb deletion in homozygous patients was always associated with mental and neurological handicaps, whereas the heterozygous phenotype was often benign and without intellectual deterioration. Whereas progression of visual impairment and epilepsy was highly concordant, progression of motor and mental deterioration was variable. Environmental and therapeutic factors, and modifying genes might influence the phenotype of Batten disease. (Jarvela I, Autti T, Lamminranta S, Aberg L, Raininko R, Santavuori P. Clinical and magnetic resonance imaging findings in Batten disease: Analysis of the major mutation (1.02-kb deletion). Ann Neurol Nov 1997;42:799-802). (Respond: Dr Jarvela, Laboratory of Human Molecular Genetics, Mannerheimintie 166, 00300 Helsinki, Finland).

COMMENT. Homozygous patients with Batten disease, having the major 1.02-kb deletion, have mental and neurological handicap and a poor prognosis, whereas the heterozygous phenotype may be benign and intellectually normal. The diagnostic DNA test is of value in determining the severity and prognosis of the disease. MRI changes indicative of atrophy and progression of pathology may develop at and after 10 years of age.

## INFECTIOUS DISORDERS

### MEASLES VACCINE AND ENCEPHALOPATHY

The relationship between acute encephalopathy followed by permanent brain injury or death associated with further attenuated measles vaccine was evaluated in 48 children, ages 10 to 49 months, reported to the National Vaccine

Injury Compensation Program, Rockville, MD. Of a total of 403 claims of encephalopathy and/or seizure disorder after measles, MR, MMR, mumps, or rubella vaccination during a 23-year period, 1970-1993, 48 met inclusion criteria, with acute encephalopathy of undetermined cause 2 to 15 days after vaccination, all following measles vaccine and none with mumps or rubella vaccine. A clustering of symptoms and peak onset of encephalopathy occurred on days 8 and 9. Fever, measles-like rash, and ataxia, associated with behavior changes and CSF pleocytosis, were the most frequent initial manifestations. Seizures occurred in 34, and rapidly progressed to coma in 29. Eight children died, and all survivors had chronic encephalopathy. The authors conclude that a causal relationship probably exists between measles vaccine and encephalopathy. (Weibel RE, Caserta V, Benor DE, Evans G. Acute encephalopathy followed by permanent brain injury or death associated with further attenuated measles vaccines: A review of claims submitted to the National Vaccine Injury Compensation Program. Pediatrics March 1998;101:383-387). (Reprints: Robert E Weibel MD, National Vaccine Injury Compensation Program, Health Resources and Services Administration, Parklawn Building, Room 8A-46, 5600 Fishers Lane, Rockville, MD 20857).

COMMENT. A causal relationship between measles vaccination and severe and sometimes fatal encephalopathy, although rare, is cause for concern. Of 403 claims of vaccine-related encephalopathic complications, only 11% were accepted because of an arbitrary selection period of 15 days. It would be of interest to compare the numbers of cases occurring within 30 days, the selection period used in a previous report. Details of the symptoms described as 'behavior changes' in survivors would also be of interest.

The incidence of post-infectious encephalitis complicating natural measles is estimated at 1 in 1000 cases, with a mortality of 10 to 20% and permanent CNS damage in the survivors. Thalamic syndrome and measles, and SSPE are reviewed in Ped Neur Briefs Jan 1998. The incidence of measles in the US increased in 1989-1991, especially in pre-school children with low immunization rates. With improved vaccination policies, indigenous measles since 1992 has been low, but the incidence of imported cases among immigrants or travelers returning to the US from under-developed countries has increased. A total of 1182 imported cases were reported by the CDC, 1983-1997. (Millichap, John J. Travel-related spread of disease. NWU Thesis, 1998). The importance of measles vaccination is obvious from these statistics, but the need for safer vaccines is also apparent.

## HEADACHE DISORDERS

### ACETAMINOPHEN, ASPIRIN, AND CAFFEINE FOR MIGRAINE

The effectiveness of two tablets of the nonprescription combination of acetaminophen, aspirin, and caffeine in alleviating migraine headache pain was evaluated in 1357 patients (mean age, 36 years) from several centers, enrolled in three double-blind, single-dose, placebo-controlled studies. Pain intensity was significantly reduced within 1 to 6 hours after receiving the combination when compared with the effect of placebo. Within 2 hours, pain was reduced to mild or none in 60% of drug-treated patients compared to 30% of controls; and at 6 hours, 50% were pain free compared to 23% of controls. Associated symptoms, nausea, photophobia, phonophobia, and functional disability, were also significantly improved. Adverse experiences, occurring in 13% of drug-treated compared to 7% of placebo controls, included nausea (5%), nervousness (4%), dizziness (3%), and gastrointestinal symptoms (3%). (Lipton RB, Stewart WF, Ryan RE Jr, et al. Efficacy and safety of acetaminophen, aspirin, and caffeine in alleviating migraine