delayed and the drug treatment is continued.

The newer anticonvulsant, lamotrigine (Lamictal®), chemically unrelated to conventional AEDs, and introduced as adjunctive therapy of partial seizures, may also cause skin rash, especially within the first six weeks of therapy, in patients receiving concomitant VPA, and in those receiving doses higher or escalated faster than generally recommended. (Glaxo Wellcome product information).

AED-induced skin rash in children treated with CBZ and lamotrigine is reviewed in Progress in Pediatric Neurology III, 1997, pp 143-146; and VOL II, 1994, pp 107-109; PNB Publishers, Chicago.

DIET, CARNITINE, AND VALPROATE-INDUCED AMMONEMIA

The effect of a protein-rich meal (45 g protein) before and after L-carnitine (50 mg/kg/day) for 7 days in 11 epileptic children treated with valproate (VPA) was studied in relation to the magnitude and duration of the VPA-induced hyperammonemia at the University of Wisconsin School of Pharmacy and Department of Neurology, Madison, WI. After a protein meal, the 2-hour plasma ammonia level was increased by 86% over baseline before carnitine administration compared to 38% after carnitine. Ammonia levels approached baseline at 4 hours after a protein meal and were not related to changes in VPA concentrations. (Gidal BE, Inglese CM, Meyer JF, Pitterle ME, Antonopolous J, Rust RS. Diet- and valproate-induced transient hyperammonemia: effect of L-carnitine. Pediatr Neurol May 1997;16:301-305). (Respond: Dr Gidal, University of Wisconsin School of Pharmacy and Department of Neurology, 425 N Charter St, Madison, WI 53706).

COMMENT. VPA increases plasma ammonia in almost 50% of children treated. The degree of hyperammonemia is related to diet. It is exacerbated by a protein rich meal, and the postprandial transient elevation of plasma ammonia is significantly reduced by L-carnitine administration and is unrelated to changes in VPA concentration. Both fasting and 2-hour postprandial plasma ammonia levels should be measured to determine the magnitude of a VPA-induced hyperammonemia.

Valproate-induced liver failure is reported in one of two siblings with Alpers disease treated at the University of Minnesota, Minneapolis. (Schwabe MJ, Dobyns WB, Burke B, Armstrong DL. Pediatr Neurol May 1997;16:337-343). Both were developmentally delayed and suffered from seizures from 5 years of age. The proband receiving VPA for only 5 days had minimal liver abnormalities at autopsy at age 8 years. The younger brother treated with VPA for 4 weeks developed acute liver necrosis and died 5 weeks after admission. VPA is not recommended in children with suspected Alpers disease, characterized by developmental delay, ataxia, and epilepsia partialis continua.

GABAPENTIN-INDUCED CHOREOATHETOSIS

Two institutionalized, severely retarded adults, aged 42 and 41, with intractable epilepsy, developed choreoathetosis within 14 days when gabapentin in dosages of 1200 to 1800 mg/d were added as adjunctive therapy to valproic acid or phenytoin, in a report from University of Texas Southwestern Medical Center, Dallas, and Denton State School, Texas Mental Health and MR System. In case 1, also receiving valproic acid, intermittent choreoathetosis occurred for many weeks after gabapentin was discontinued,

and valproic acid may have contributed to the movement disorder. In case 2, receiving phenytoin, a gabapentin rechallenge caused recurrence of choreoathetosis in 7 days but to a lesser degree; the reduced severity of movements was related to a reduction in dosage of phenytoin. (Chudnow RS, Dewey RB Jr, Lawson CR. Choreoathetosis as a side effect of gabapentin therapy in severely neurologically impaired patients. Arch Neurol July 1997;54:910-912). (Respond: Robert S Chudnow MD, Department of Neurology, University of Texas Southwestern Medical Center, 1935 Motor St, Dallas, TX 75235).

COMMENT. The risk of gabapentin-associated choreoathetosis in this institution was 2 of 28 patients treated (7.1%). The risk appears to be related to polytherapy and high serum levels of other anticonvulsants, VPA and phenytoin, also known to cause choreoathetosis. Neurological impairments and intractable epilepsy with brain damage are likely contributing factors. A previous report of choreoathetosis with gabapentin in a severely mentally retarded adult is reviewed in Progress in Pediatric Neurology III, 1997, p157.

ANEMIA ASSOCIATED WITH LAMOTRIGINE

Two cases of anemia associated with lamotrigine adjunctive therapy for intractable epilepsy, one a 17-year-old with Lennox-Gastaut syndrome, are reported from Texas Tech University, Lubbock, TX. One patient had a previous history of iron deficiency anemia. The lowest Hct and Hgb levels, recorded after 2 months of treatment with lamotrigine, in combination with valproic acid, were Hct 32.7 and 18.9% and Hgb 9.9 and 7 g/dl. An associated increase in platelets to 427 and 446 K/mcl represented a reactive thrombocytosis. Neither case required intensive medical management, and the anemia resolved rapidly when the lamotrigine was discontinued. (Esfahani FE, Dasheiff RM. Anemia associated with lamotrigine. Neurology July 1997;49:306-307). (Reprints: Dr Richard M Dasheiff, Texas Tech University Health Sciences Center, Division of Neurology, 3601 4th St, Lubbock, TX 79430).

COMMENT. The authors cite 3 previous case reports of hematological side effects with lamotrigine, all associated with polytherapy, including valproic acid or carbamazepine, drugs known to cause anemia or leukopenia. CBC monitoring may be advisable when introducing lamotrigine, particularly in patients receiving valproic acid or carbamazepine in combination.

SEIZURE DISORDERS

POST-SURGICAL OUTCOME OF INFANTILE SPASMS

Two-year postsurgical developmental outcome was assessed in 24 children with infantile spasms treated at the University of California, Los Angeles. All were symptomatic cases with neurological deficits and had received ACTH and multiple medications without benefit before the cortical resections. Seizures began at a mean age of 12 weeks and surgery was at 20 months of age. The developmental levels assessed by the Vineland Adaptive Behavior Scales were significantly increased at 2 years post surgery compared to presurgical levels, and only one child was severely retarded. The outcomes in this UCLA surgical series were equal to and sometimes superior to other symptomatic series receiving only medical treatment. Those who received surgery at an early age had the better presurgical developmental levels and the best 2-year postsurgery outcomes. (Asarnow RF, LoPresti C, Guthrie D et al.