The authors of this study conclude that appropriate indications and timing of AED level determinations were not followed in 75% of patients in their tertiary care hospital. More careful adherence to appropriate monitoring indications would have resulted in cost reductions without significant risk of ineffective therapy or toxicity.

AGE FACTORS AND ANTIEPILEPTIC DRUG WITHDRAWAL

Age dependent factors concerning the withdrawal of antiepileptic drugs (AED) and seizure relapse rates, after a seizure-free period longer than 3 years, were evaluated in 304 patients with childhood epilepsies treated at the Toyama Medical and Pharmaceutical University, Toyama City, Japan. The incidence of AED withdrawal differed significantly between epileptic syndromes, being higher in idiopathic than in symptomatic epilepsies. Age at withdrawal peaked at preadolescence and early school age. Relapses occurred in 14%, the rate differing between epileptic groups and occurring at a unique age in each epileptic syndrome. Relapse rates were 33% and 20% in symptomatic *generalized* and *partial* epilepsies, respectively, and 5 to 8% in benign infantile convulsions, and idiopathic partial epilepsies. Idiopathic generalized epilepsy syndromes had higher relapse rates: 25% in juvenile absence, 100% in juvenile myoclonic, and 27% in grand mal on awakening epilepsy. Relapses were more frequent in epilepsies of infantile or adolescent onset than in those of school age onset. Age of relapse peaked at ages 7 to 11, mainly benign childhood epilepsy with centrotemporal spikes, and 17 to 19 years, mainly symptomatic partial, juvenile myoclonic, and grand mal.

EEG paroxysmal discharges did not necessarily predict a relapse, but changes in background activity with age showed correlations with rate of seizure recurrence. In patients without relapse, the background showed an increased maturation in mean frequency, with decrease in slow waves and increased alpha activity, during AED control before drug withdrawal. (Murakami M et al. Withdrawal of antiepileptic drug treatment in childhood epilepsy: factors related to age. J Neurol Neurosurg Psychiatry 1995;59:477-481). (Respond: Dr Miyako Murakami, Department of Pediatrics, Toyama Medical and Pharmaceutical University, 2630 Sugitani, Toyama City 930-01, Japan).

COMMENT. Age dependent factors are important in time of withdrawal of AED and in prognosis after attempted AED withdrawal. Epileptic syndromes have an age dependent onset and course, related to CNS maturation, and varying relapse rates. Most frequent relapse rates occurred in patients undergoing drug withdrawal in preadolescence, eg benign childhood epilepsy with centrotemporal spikes, and early adulthood, eg symptomatic partial epilepsies. The characteristic course of each epileptic syndrome should be considered when attempting AED withdrawal. Background activity in the EEG is also an important factor, the persistence of slow waves and decreased alpha activity indicating an increased risk of relapse.

SAFETY OF INTRAVENOUS VALPROATE

A multicenter. open-label study of the safety of intravenous sodium valproate in 318 hospitalized patients with epilepsy is reported from the NYU Hospital for Joint Diseases; MINCEP Epilepsy Care and Minnesota Epilepsy Group, MN; University of Texas, Houston; Medical College of Virginia, Richmond; Bowman-Gray School of Medicine, Winston-Salem, NC; and

University of Miami, FL. Mean age was 34 years (range, 2-87 years). Valproate aqueous solution (500mg/5 ml), one-fourth daily dose (median dose 375 mg or 5.1 mg/kg), diluted with 50 ml normal saline or 5% dextrose/water, infused over 1 hour, repeated 6 hourly for up to 2 days. Transient severe side effects in 54 (17%) included headache, reaction at injection site, nausea, vomiting, somnolence (2% each), dizziness, and abnormal taste (1% each). Six left the study prematurely due to valproate intolerance: pain at IV site, amylase elevations, headache, nausea and vomiting. Abnormal serum chemistries following treatment in 7 generally returned to normal. (Devinsky O et al. Safety of intravenous valproate. Ann Neurol Oct 1995;38:670-674). (Respond: Dr Devinsky, Department of Neurology, Hospital for Joint Diseases, 301 East 17th Street, New York, NY 10003).

> COMMENT. This study demonstrates the relative safety of IV valproate, which is not yet available for general use in the US. Previous studies in Europe, where the IV preparation is available, have demonstrated efficacy in neonatal seizures, and in neurosurgical adult patients with status epilepticus resistant to diazepam. The authors recommend further trials to determine optimal dose, efficacy, and safety.

LORAZEPAM V DIAZEPAM IN STATUS EPILEPTICUS

A prospective, open, odd and even dates trial of lorazepam compared to diazepam for the treatment of acute convulsions and status epilepticus in 102 children is reported from the Royal Liverpool Children's NHS Trust, UK. Lorazepam (0.05 - 0.1 mg/kg) and diazepam (0.3 - 0.4 mg/kg) controlled convulsions within 20 to 60 seconds in 76% and 51% of patients, respectively, after a single dose administered IV over 15 to 30 seconds. Multiple doses as well as additional AEDs were required in 17 patients who received an initial injection of diazepam compared to only 1 who received lorazepam. Respiratory depression occurred in 7 diazepam treated patients and necessitated admission to intensive care. No patient receiving lorazepam required intensive care. Rectal administration, when venous injection was not possible, was 100% effective with a single dose of lorazepam in 6 patients treated, whereas 13 of 19 patients receiving diazepam rectally required multiple doses, 12 required additional AEDs, 1 had respiratory depression, 2 were admitted to intensive care, and 7 relapsed with recurrence of seizures within 24 hours. (Appleton R et al. Lorazepam versus diazepam in the acute treatment of epileptic seizures and status epilepticus. Dev Med Child Neurol 1995;37:682-688). (Respond: Dr Richard Appleton, Royal Liverpool Children's NHS Trust, Alder Hey, Eaton Road, Liverpool L12 2AP, UK).

> COMMENT. Lorazepam appears to be safe, at least as effective as diazepam in the initial control of acute convulsions, including status epilepticus, and more effective in sustaining seizure control. Rectal lorazepam was useful in infants when intravenous injection was impractical. Lorazepam has a longer half life than diazepam, and its duration of action is more prolonged, accounting for the more sustained control. (See Progress in Pediatric Neurology I, 1991, PNB Publishers, pp124-5).

RISK OF STEVENS-JOHNSON SYNDROME WITH AEDs

An international case-controlled study of medication use and the risk of Stevens-Johnson syndrome or toxic epidermal necrolysis is reported by the Groupe Epidemiologie LY Stevens Johnson (ELYS), Department of Dermatology,