

AMMONIA BLOOD LEVELS AND VALPROIC ACID

The prevalence and magnitude of valproic acid (VPA)-related hyperammonemia (HA) were estimated by a review of the literature, and the clinical symptomatology and risk factors for the development of HA determined by researchers at university hospitals in Santiago, Chile; and Rush University Medical Center, Chicago, IL. Out of 183 studies between 1980 and 2005, 24 met inclusion criteria; 7 were prospective and 17 cross-sectional. The prevalence of HA in prospective studies ranged from 70% to 100% (mean 90.3%), and in cross-sectional studies it varied between 16% and 100% (mean 47.4%). Ammonia blood levels increased two-fold on average compared to baseline. In one study, children younger than 2 years treated with VPA to a plasma level above 100 mg/L were at greater risk of developing HA; 4 studies found no significant correlation between age and HA. Two studies in children found a relation between VPA levels and HA. HA was not related to clinical symptoms. Hepatic dysfunction was not observed in 11 studies with liver function tests. HA correlated with administration of other antiepileptic drugs and polytherapy. (Chicharro AV, de Marinis AJ, Kanner AM. The measurement of ammonia blood levels in patients taking valproic acid: looking for problems where they do not exist? *Epilepsy & Behav* Nov 2007;11(3):361-366). (Respond: Ada Chicharro c/o Andres Kanner, Department of Neurological Sciences, Rush University Medical Center, Epilepsy Center, 1653 West Congress Parkway, Chicago, IL 60612).

COMMENT. The administration of concomitant antiepileptic polytherapy was most frequently associated with hyperammonemia (HA). Age, and dose and blood levels of VPA were not significant risk factors for HA, except for children younger than 2 years who may have a greater susceptibility to develop HA. Based on this review, measurement of ammonia blood levels in asymptomatic patients taking VPA is not advised and may lead to diagnostic confusion. HA alone is not an indication to discontinue VPA. Ammonia blood levels are recommended in patients taking VPA who exhibit signs of acute encephalopathy. Alternative causes for an encephalopathy should also be investigated in VPA-treated patients with HA.

ATTENTION DEFICIT DISORDERS

FREQUENCY AND ETIOLOGY OF ADHD IN NEW ONSET EPILEPSY

The prevalence, complications and etiology of ADHD were determined in 75 children (age 8-18 years) with new/recent onset idiopathic epilepsy and 62 healthy first-degree cousin controls, in a study at University of Wisconsin School of Medicine and Public Health, Madison, WI; and Rosalind Franklin University of Medicine and Science, North Chicago, IL. ADHD was present in 31.5 % of children with new onset epilepsy compared to 6.4 % of healthy controls ($P<0.001$). Among children with epilepsy and ADHD, 52.1% (12/23) had the inattentive subtype, 17.4% (4/23) were hyperactive subtype, 13.1% (3/23) were combined type, and 17.4% (4/23) were NOS subtype. ADHD was present before seizure onset in 19/23 children (82%). The ADHD+ children were more likely to have an IEP than controls (52.2% vs 15.4%, $P<0.001$), or they had more supportive academic services (69.6% vs