

GAIT INSTABILITY DUE TO VALPROATE INDUCED HYPERAMMONEMIA IN PATIENTS WITH FRONTAL LOBE EPILEPSY

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Background: Hyperammonemia (HA) induced by valproate (VPA) treatment may lead to several neurological and systemic symptoms as well as to seizure exacerbation. Gait instability and recurrent falls are thought to be rare manifestations.

Patients: We present 5 patients, 25-42 years old, with frontal lobe epilepsy (FLE). All of them were treated with polytherapy. Following the addition of VPA in 3 patients and under chronic VPA treatment in 2, gait instability with falls and mild encephalopathy developed. VPA levels were within therapeutic limits. Serum ammonia levels were 291- 407 micromole/l (normal range 20-85). VPA dose was reduced or discontinued. Ammonia returned to normal levels and the clinical symptoms were resolved, while the seizures remitted in 3 patients, decrease in frequency or became shorter in others.

Conclusions: Gait instability due to HA and VPA treatment is probably unrecognized in many patients. It can develop in the presence of normal VPA levels and normal or slightly elevated liver enzymes. FLE may change the functional properties of the astrocytes in the frontal region; therefore leading to greater vulnerability to VPA- induced HA and gait instability. HA may appear after brief or after long period exposure to VPA.