Article: 1935
Topic: 65 - Psychopharmacology and Pharmacoeconomics

NEUROTOXICITY AND VALPROIC ACID-INDUCED HYPERAMMONEMIA - THREE CASE REPORTS

M. Esteves-Pereira[1], *D. Rodrigues*[1], *J. Bouça*[1], *R. Ribeiro-Silva*[1,2]

[1]Department of Psychiatry, Centro Hospitalar de Vila Nova de Gaia/Espinho, Vila Nova de Gaia, [2]Department of Medical Psychology, Faculty of Medicine of University of Porto, Porto, Portugal

Introduction: Valproic acid (VA) is an effective mood stabilizer. Although it's usually well tolerated, it may cause hyperammonemia through carnitine deficiency created by its inhibition of mitochondrial enzymes in the urea cycle. Clinical presentation of hyperammonemia usually involves lethargy and somnolence but this diagnosis is often overlooked due to a clinical presentation that may include normal liver enzyme tests and serum VA levels within therapeutic range.
Objectives: To present case-reports of VA-induced encephalopathy and a review study regarding the theme available in *Medline*.
Aim: Brief literature review.
Method: Three case-reports are presented and literature of this theme shortly reviewed.
Results: The authors present cases of three adult females with Personality Disorder with lack of impulse control and Bipolar Disorder who have began treatment with VA and presented in the Emergency Department with generalized weakness and confusion. Subsequently, they developed hyperammonemia, despite its therapeutic serum levels and normal liver enzymes. În all cases the patient´s mental status and ammonia level returned to baseline following discontinuation of VA.
Conclusions: Confusion with VA is a serious, rather frequent but reversible side affect. It has been reported that VA can interfere with the enzyme carbamoylphosphate synthetase, which is responsible for incorporating ammonia into the urea cycle. It can also increase the transport of glutamine across the mitochondrial membrane in the kidney, thereby increasing the production of ammonia causing neurotoxicity. Clinicians should be aware of changes in patient´s cognitive and functional capacity, especially in elderly patients and during the first two weeks of treatment.

https://doi.org/10.1016/S0924-9338(13)76879-2 Published online by Cambridge University Press