

Sodium Valproate Induced Hypoglycemia: A Rare Case Report

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Abstract— Sodium valproate has been used for various purposes in clinical practice as an effective mood stabilizer and anti-convulsant. Adverse effects like gastritis, rash, alopecia, edema, pancreatitis have been commonly reported. Here we are presenting a rare case where hypoglycemia has been reported with the use of sodium valproate.

Keywords— Sodium Valproate, adverse effects, hypoglycemia.

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I. INTRODUCTION

Sodium valproate is one of the effective mood stabilizers used in psychiatric clinical practice for its use in Bipolar affective disorder, personality disorders, schizoaffective disorders and also for other psychotic disorders for its use in controlling aggression and irritability. Commonly reported adverse effects of valproate include rash, gastritis, alopecia, edema and in many cases hepatic dysfunction, pancreatitis, apnea, thrombocytopenia and leukopenia^(1,2). Most serious complication such as Reye like syndrome of stupor, coma, hepatic dysfunction and hyperammonemia have also been reported in children^(3,5). Hypoglycemia as an adverse effect is very rarely reported in the literature. This case report describes a case where hypoglycemia has been reported by the use of Sodium Valproate.

II. CASE REPORT

Mr. A is a 27 year old unmarried male, formally educated up to twelfth grade admitted in the male psychiatric forensic ward referred from central prison who is an under trial prisoner who was jailed for teasing women on the streets. Patient was showing aggressive behavior towards fellow prisoners and staff demanding cigarettes. History revealed that the patient was using cannabis previously for the past 10 years, started initially at the age of 17 years for experimentation along with his friends, one joint occasionally once in a week for around 6 months, then gradually increased to one to two joints daily due to craving. Gradually he increased consumption to three to five joints of cannabis daily, demanding money from parents and neighbors and sometimes used to sell household objects for money. He also used to consume alcohol occasionally. He used to show aggressive behavior towards his parents frequently when his demands were not met. Patient showed callous unconcern for feelings of his parents and other family members. He also had difficulty in maintaining enduring relationship due to his low tolerance to frustration. His last intake of cannabis was 8 months back, after which he was sent to prison for teasing

women on the streets. He was diagnosed with Anti-social personality disorder with polysubstance abuse. His sleep, appetite and food intake are normal. No history of other medical complications like hypertension, diabetes mellitus, tuberculosis, epilepsy, and head injury were present. His baseline investigations were normal. He was started on Sodium Valproate 500 mg per day in two divided doses to control his aggression and gradually increased to 1000 mg per day. 1 week later he started developing giddiness, decreased appetite and generalized weakness. His fasting and post prandial glucose levels were done which showed 58 mg / dl and 74 mg / dl respectively. Five percent dextrose was administered and his glucose levels were monitored. Patient showed signs of hypoglycemia even after administration of Intravenous fluids. His fasting and post prandial glucose levels showed constantly low levels for four days in four consecutive readings. Patient was investigated further to rule out insulinoma, whipple's disease by the endocrinologist which were found to be negative. Sodium valproate was discontinued for the patient later and he started showing improvement in symptoms. He did not develop any further giddiness or weakness and his appetite has improved, fasting and post prandial glucose readings came out to be normal on consecutive days. He was later switched on to Carbamazepine and is maintained on 800 mg per day in divided doses.

III. DISCUSSION

Hypoglycemia is a fatal side effect, though a rare adverse effect of sodium valproate. Not many cases have been reported where sodium valproate induces hypoglycemia. The above patient showed signs and symptoms due to hypoglycemia caused by sodium valproate. Patient was evaluated for other organic causes of hypoglycemia such as insulinomas, whipple's disease etc. which were found to be negative. Discontinuation of the drug caused the glucose levels to reach normal levels. Possible cause for hypoglycemia caused by valproate is that valproate acts as a substrate for the fatty acid β -oxidation pathway, resulting in carnitine consumption. Thus, when β - oxidation of fatty acids is

inhibited by a low carnitine level, hepatic gluconeogenesis during fasting is decreased, resulting in hypoglycemia⁽⁶⁾.

IV. CONCLUSION

The above case throws light into the possible hypoglycemic side effects seen with the use of Valproate and clinician should keep in mind the possible rare adverse effects associated with its use.

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Conflicts of Interest

There are no conflicts of interest.

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