



## NOCTURNAL ENURESIS IN AN EPILEPTIC CHILD DUE TO SODIUM VALPROATE

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### ABSTRACT

Nocturnal enuresis (NE) is defined as the involuntary discharge of urine while asleep at night. Sodium valproate is a fatty acid with anticonvulsant properties used in the treatment of epilepsy. Adverse drug reaction of nocturnal enuresis due to sodium valproate is underreported. A 10-year-old female epileptic child with Sodium valproate induced nocturnal enuresis after increasing the dose of her therapy. The decision was made to change her therapy to Levetiracetam. Increased dose of Sodium valproate may cause nocturnal enuresis. Child was recovered from the nocturnal enuresis after 10 days of discontinuation of sodium valproate.

**KEYWORDS:** Sodium valproate, Enuresis, Adverse drug reactions, Seizures.

### INTRODUCTION

There are around 10 million people in India suffering from Epilepsy.<sup>[1]</sup> A seizure is an abnormal neurologic function caused by the excessive, hypersynchronous discharge of neurons in the brain.<sup>[2]</sup> Nocturnal enuresis (NE) is defined as the involuntary micturition during sleep at night time.<sup>[3]</sup> Sodium valproate is an anticonvulsant drug used in the treatment of epilepsy.<sup>[4]</sup> Enuresis is difficult to differentiate in paediatric patients between normal for age or due to epilepsy and or due to drug itself.<sup>[3]</sup> WHO adverse drug reaction database called Vigibase shows 26 cases of Sodium valproate induced Nocturnal enuresis.<sup>[5]</sup>

### CASE REPORT

Ten-year-old female child, with history of breakthrough seizures in form of Generalised tonic clonic seizures from the age of one year. She was undergoing treatment with Sodium valproate syrup (15mg/kg/day). She had good adherence with the medication and was on regular follow up with Paediatrician. After one-year usage of Sodium valproate syrup child had breakthrough seizures in form of Generalised tonic clonic seizures. Hence clinician had increased the dose (30mg/kg/day) of sodium valproate. One month later, child again presented with breakthrough convulsions in spite of taking regular medication (40mg/kg/day). Mother had noticed that increased frequency of micturition and bed wetting in night after increasing the dose of sodium valproate from 30mg/kg/day to 40mg/kg/day. Increased frequency of micturition was not associated with pain or burning sensation. There was no history of fever. Child had normal frequency and voluntary control of micturition

prior to Sodium valproate treatment. There was no family history of enuresis.

Child had achieved bladder control at the age of two and half years. But this time the bed wetting started with increased dose of Sodium valproate from the past one month. Nocturnal Enuresis occurred two to three times in the night almost daily. The child had worried about the involuntary urination during sleep at night.

On investigation, complete blood count showed HB 12.2 mg/ dL, WBC 18.3/ cumm, platelets 2.6 lakh. Liver function tests were done and found to be within normal limits (SGOT 27IU/L, SGPT- 11IU/L). Therapeutic drug monitoring of valproate was not done at this increased dose. Child was diagnosed of Valproate induced nocturnal enuresis after examining the all other reasons of increased frequency of micturition. After substituting Levetiracetam with Sodium valproate, child had recovered from nocturnal enuresis after 10 days. On causality assessment using WHO causality scale<sup>[6]</sup>, association was Probable for the Sodium valproate.

### DISCUSSION

Enuresis is involuntary control of micturition after the age of 5 years. The prevalence of enuresis at the age 5 is 10%, at the age 10 is 2.5%, at the age 15 is 1%.<sup>[7]</sup> WHO adverse drug reaction database called Vigibase shows 26 cases of Sodium valproate induced Nocturnal enuresis.<sup>[5]</sup> As per *Wentao Cheng et al.* Nocturnal enuresis induced Sodium valproate is dose related side effect. our case report also suggested that after increasing the dose of Sodium valproate dose child had developed nocturnal enuresis. Sodium valproate may cause changes in renal

tubules and increase thirst.<sup>[8]</sup> As per Gosavi DD et al. increased frequency of micturition and enuresis had been identified as side effect with sodium valproate. The decision was made to change her therapy to Levetiracetam, child had recovered from nocturnal enuresis. As per our literature search and present case report we are suspecting that increased dose of sodium valproate may cause nocturnal enuresis. In all cases, clinicians should be aware that Sodium valproate may cause Enuresis in Paediatric patients. We had reported this case report to Pharmacovigilance programme of India.

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