International Journal of Pharmaceutical Research and Applications
Volume 7, Issue 5 Sep-Oct 2022, pp: 1096-1097 www.ijprajournal.com ISSN: 2456-4494

# A Case Report - Phenytoin Induced Ataxia

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Submitted: 10-10-2022 Accepted: 21-10-2022

**ABSTRACT:**
Nowadays seizures are one of the most common neurological disorder. Anti-epileptic drugs are widely used to treat these disorder but on the other hand it also has some common and serious adverse effects such as motor ataxia, dizziness, and visual disturbance. In entailing paragraphs the case report show the adverse effects of phenytoin which were confirm through neurological examinations.

**Keywords** – Ataxia, Phenytoin, Magnetic resonance imaging (MRI)

## I. INTRODUCTION:

A common brand name for phenytoin (PHT) is Dilantin, there are other names as well. It is effective in preventing focal seizures and tonic-clonic seizures (commonly known as grand mal seizures), however it is not used in absence seizures. Status epilepticus that does not respond to benzodiazepines is treated with the injectable form of fosphenytoin. Additionally, some heart arrhythmias and neuropathic pain may be treated with it. Moreover,it can be ingested or administered intravenously. The effects of the intravenous form typically start to take effect in around 30 minutes and last for about 24 hours [1]The action potential is increased via voltage-dependent membrane sodium channels, which are blocked by phenytoin. This prevents the spread of the seizure at focal site by blocking the positive feedback that supports high-frequency repetitive firing.The most frequent side effects of phenytoin that are dose-related (phenytoin toxicity) and correlate with plasma levels include nystagmus, ataxia, and tiredness. These negative effects seem to start after plasma levels approach 20 mcg/dl, 30 mcg/dl, and 40 mcg/dl; however, patient responses to dose-related pharmacological effects may vary greatly Studies show that phenytoin has more detrimental neurological and cognitive side effects than newer antiepileptic medications.[2]

## II. CASE REPORT

A 21-year-old female, a resident of a rural place in Maharastra (India), she was married and working as a labour. Due to history of epilepsy (generalized tonic-clonic) she was on phenytoin from past 4 years. Furthermore, she had not taking medication from past 2 days. She come to tertiary care hospital with her relatives and presented with symptoms of sudden vertigo, abnormal walk and mild headache form last 4 days. She was on mixed diet. The patient has not undergone any previous radio imaging and she was on tablet phenytoin, dose of 300 mg/day in multiple doses started by a private practioner. The patient was conscious and oriented with time and surroundings. On examination. Nystagmus, dysarthria, gait ataxia signs were diagnosed on neurological examination. Magnetic resonance imaging (MRI) showed gliotic area in the left temporal lobe with the external soft tissue mass in the left frontal region. Patient.went under Serum level of phenytoin level was seems tobe above the normal range normal i.e. 25mcg/ml in the patient. The patient was given supportive therapy with multivitamin tablets and change of anticonvulsant to tablet carbamazepine- 200 mg and tablet clobazam - 5 mg. She showed noteworthy improvement in symptoms and was discharged after a period of three day and was on monthly follow-up.

## III. DISCUSSION:

Antipsychotics and centrally acting dopaminergic agents are two common causes of movement abnormalities, however anticonvulsants can also occasionally be seen as a contributing factor. Phenytoin use has been linked to to facial abnormalities, myoclonus, and dystonia, according to studies. The cerebellum was discovered to be toxic to phenytoin in both clinical and laboratory settings, and Purkinjee cell degeneration was also observed in humans following a single massive phenytoin overdose. The majority of patients who experienced these uncontrollable movements had high plasma phenytoin levels, as was the case in our instance, where the plasma phenytoin level was toxic. Patients who had long-term phenytoin exposure also displayed cerebellar degeneration.The possibility of those odd movements seen in our case study is ruled out by the excess toxic level of phenytoin in the blood at

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the time of diagnosis. In terms of pharmacokinetics, restricted therapeutic indices, and individual variability in phenytoin metabolism and excretion, the symptoms endured by the patient in our investigation were obvious. Since phenytoin's pharmacokinetics follows a nonlinear path that shifts from first order to zero order kinetics, even a modest change in dose might generate varied serum concentrations because phenytoin's saturation of its elimination parameters can occur.[3,4]

## IV. CONCLUSION:

In order to prevent ADRs (adverse drug reactions) continuous monitoring and creating awareness among the patient is must regarding miss dosed and life style modifications. Recognition of problem and treating patient carefully with proper management is necessary and most important thing.

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