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Case Report

Idiopathic Late-Onset Cerebellar Ataxia with Phenytoin: A Case Report

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ABSTRACT

Phenytoin is an antiepileptic drug and is commonly prescribed for generalized tonic-clonic seizure. It blocks the voltage gated sodium channel and produce the action. It has a narrow therapeutic index. Adverse effects are very common with phenytoin but idiopathic ataxia is rarely observed. We report a case of a 30-year-old male patient who had chief complaints of ataxia, giddiness and vomiting. He had past medical history of epilepsy for which he was adherent to phenytoin from past four years.

Key words: Phenytoin, Ataxia, Male, Epilepsy, Adverse drug reaction.

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INTRODUCTION

Phenytoin (5,5 diphenylhydantoin) was synthesized in 1908 and introduced in the treatment of epilepsy in 1938.[1] It is effectively used for the treatment of tonic-clonic or partial seizure.[2] The mechanism of phenytoin is voltage-dependent blockade of membrane sodium channels responsible for the action potential.[3] Phenytoin is poorly water soluble and its absorption is rapid with peak plasma concentration at 1.5 to 3 hrs. Phenytoin has a narrow therapeutic window, between 10-20 mg/L. It is metabolized by the hepatic P450 enzyme system, predominantly CYP2C9 and CYP 2C19 and induces CYP3A. The normal average half-life of phenytoin is of hours.[4] Ataxia belongs to a group of disorders which affects co-ordination, balance and speech. Those who get affected with ataxia have difficulties with speaking, balance and walking.[5] Ataxia can be categorised into three broad categories and depicted in Table 1.

Table 1: Different categories of ataxia with description.

Types of ataxia	Description
Acquired	Damage of nervous system
Hereditary	Inherited from parents
Idiopathic late-onset cerebellar	Brain progressively damages

CASE DESCRIPTION

A 30-year-old male patient brought to the emergency department by 8:30 pm with the chief complaints of giddiness, slurring of speech since evening along with three episodes of vomiting. His past medical history revealed that he was a known case of seizure disorder from past four years for which he was taking Tab. phenytoin 100 mg twice a day. He was alcoholic (brandy) and smoker (beedi two packs per day).

On examination patient was conscious oriented, his blood pressure was measured to be 110/70mmHg, pulse rate: 90 beats/min, central nervous system: slurry speech+ with ataxia, per abdomen was soft. During his lab investigations the polymorphs was found to be 69%, lymphocytes- 23%, monocytes-8%. MRI (Magnetic Resonance Imaging) was done which revealed the shrinkage of cerebellum.

On day of admission, patient was treated with intravenous fluids such as normal saline 2 pint @ 50ml/hr, Inj. ranitidine 50mg IV BD, Tab. phenytoin 100mg BD, Tab. trihexyphenidyl 2mg OD, Tab. sodium valproate 200mg TDS, Tab. vitamin B complex 30.5mg OD, Cap. omeprazole 20mg BD. Next day patient had chief complaints of deviation of mouth to left side and mild slurring of speech. After the complaints doctor advised to stop phenytoin. Patient prognosis was getting better on day 3 and day 4. Patient was discharged on day 5 and referred for neurologist opinion to super speciality hospital for further consultation. Patient's informed consent was taken for publication of his data.

DISCUSSION

Adverse drug reaction is an injury which happens after taking medicine. It can happen with a single dose of medication or more than one. Phenytoin is widely prescribed drug for epilepsy, but it possesses some serious adverse effects out of which one is cerebellar ataxia. It originates in the cerebellum.[6] It presents with a symptoms of inability to coordinate movements. In our case patient was treated symptomatically. For many years it was not treatable. Drugs have been studied but level of incidence is very low. Frenkel exercises are found to be helpful.[7] These are the set of exercises which are simple needs no equipment in which patient watches his or her hand/arm movements and corrects them as needed. Buspirone[8] which is an anti-anxiety drug shown to be helpful in treating mild to moderate cerebellar ataxia. It increases the serotonin levels and thus helping in decreasing ataxia. Behavioural intervention[9] can be tried as it is successful with cerebellar ataxia.

CONCLUSION

Phenytoin is widely prescribed antileptic drug with its more efficacy. However adverse drug reactions should be regularly monitored as it can

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lead to phenytoin toxicity. Ataxia is treatable but lot of discovery is still required.

CLINICAL SIGNIFICANCE

This report is an unusual case, very few cases have been reported in literature. It will be an interesting case for scientific fraternity and it provides more awareness among readers.

PATIENT CONSENT

Patient consent was taken for publishing his report without revealing his identity.

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CONFLICT OF INTEREST

The authors declare none.

ABBREVIATIONS

MRI: Magnetic Resonance Imaging.

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