

PHENYTOIN INDUCED GINGIVAL HYPERTROPHY AND HIRSUTISM

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ABSTRACT

Phenytoin is commonly used antiepileptic agent, mainly to treat generalized convulsion and partial seizure. The serious side effect of phenytoin ranges from therapeutic dose to toxic dose. We present a case of 35 year old female patient on phenytoin therapy for past 1 year for seizure and presented with complaints of gingival hypertrophy with bleeding gum, maloccluded teeth and hirsutism. Based on the clinical examination, her condition was diagnosed as phenytoin induced multiple adverse drug reaction. The clinical symptoms improved on withdrawing the offending agent and were started with sodium

valproate.

KEYWORDS: Antiepileptic agent, phenytoin, gingival hyperplasia, hirsutism.

INTRODUCTION

Epilepsy is a chronic neurological disorder characterized by recurrent seizures. The main goal of treatment for epilepsy is to make patient seizure free with reduced side effect.^[1] Phenytoin is one of the most commonly and widely prescribed anticonvulsant.^[2] Phenytoin is a hydantoin derivative mainly used to treat tonic clonic and complex partial seizure.^[3] Phenytoin controls convulsion by acting on central nervous system and modifying the bioelectrical activity.^[4] The most common side effects of phenytoin are sedation, nystagmus, ataxia, blurring of vision. Previous studies show that gum hypertrophy and hirsutism was probably common adverse effect of phenytoin.^[5] Here, we present a case on phenytoin induced gingival hypertrophy and hirsutism.

CASE REPORT

A 35 year old female patient was admitted with irritability, giddiness, loss of balance on walking, aggressive behavior. On further questioning her parents revealed that she was known case of seizure disorder and has been on phenytoin 300mg/day for past 1 year. The patient was free from seizure with phenytoin therapy. On oral examination, shows maloccluded tooth, gingival hypertrophy on both lower and upper jaw along with bleeding gum. There was also nodular lesions and hirsutism present. She was found to be mentally retarded and undernourished.

On investigation complete blood count shows decrease in hemoglobin 9.6mg/dl where other blood parameters, liver function test were within normal limits. The serum phenytoin level were found to be 26mg/L (normal 10-20mg/L). The patient's physical presentations and past medical history confirms phenytoin induced gingival hypertrophy and hirsutism. The management was done by tapering the dose of phenytoin for 15 days and started with an alternative antiepileptic drug, sodium valproate 500mg/day. After 15 days the offending drug was discontinued and the symptom resolves slightly.

DISCUSSION

Phenytoin is a major antiepileptic drug with a narrow therapeutic index of 10-20mg/L. The pharmacokinetics of metabolism changes from first order to zero order kinetics.^[6] The elimination rate follows first order below the plasma concentration of 10mg/L and at higher concentration the elimination kinetics changes to zero order.^[7] Small increments in dose produce disproportionately high plasma concentration. The metabolic enzyme get saturated when the plasma concentration rises above 30mg/L which increase the plasma half-life, 12-24 hour up to 60hours.^[8] The prolonged half-life may result in toxic symptoms.

At therapeutic level of phenytoin, gum hypertrophy, hirsutism, osteomalacia, hypersensitivity reaction and megaloblastic anemia can occur. The dose related toxicity includes ataxia, nystagmus, vertigo, mental confusion, hallucination, drowsiness and disorientation.^[6] This patient was presented with gingival hypertrophy and hirsutism.

CONCLUSION

Phenytoin has been used for over 60 year as first line antiepileptic drug, primarily for generalized seizures and partial seizures. Long term treatment with phenytoin may result in

toxic effect. Monitoring of serum phenytoin level should be done during the therapy. The clinicians should be alert on the toxic effects of phenytoin on long term use.

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