Medical and Research Publications
International Open Access

Letter to Editor **Journal of MAR Neurology (Volume 3 Issue 3)**

Phenytoin Induced Thrombocytopenia: A Rare Dose Related Adverse Reaction.

Kuljeet Singh Anand[1], Bhavya Pahwa[2], Abhishek Juneja[1].

1. Department of Neurology, Atal Bihari Vajpayee Institute of Medical Sciences (Formerly PGIMER) & Dr Ram Manohar Lohia Hospital, Guru Gobind Singh Indraprastha University, New Delhi-110001 India.

2 Medical Student, University College of Medical Sciences and GTB Hospital, Delhi-110095 India.

Corresponding Author: Dr. Kuljeet Singh Anand, Department of Neurology Dr.R. M. L Hospital, ABVIMS & Dr RML hospital, GGS-IP University, New Delhi-110001 India.

Received Date: September 25, 2021

Published date: October 01, 2021

Drug induced thrombocytopenia is a relatively rare adverse reaction, although its consequences are severe. Hence it is important to extend our knowledge in this subject. We report one such case of phenytoin induced thrombocytopenia.

A 57-year-old male presented with an isolated finding of thrombocytopenia in february 2020. For 25 years he has been a known case of generalized seizure disorder and has been on phenytoin since then. In august 2019, he was presented to the hospital with complaints of generalized tonic clonic seizures, fever and chills for two days. Hematological investigations showed mild leukocytosis with increased neutrophils; Hb: 17.9 gm%, TLC: 11,200/cumm, DLC: N83L10E4M3, RBC: 5.75 mill/cumm, Platelets: 1.12 lacs/cumm. Liver and Kidney function tests along with the electrolytes were within normal range.

He was investigated for the cause of fever. Malarial serology, hepatitis serology and HIV 1 and 2 were all non-reactive. Head CT scan and lumbar puncture were also normal. Finally, the Typhoid IgM antibody came back positive with significant titers and he was started on intravenous antibiotics- ceftriaxone. The patient recovered in 4 days and was discharged with follow-up in 10 days.

The follow up investigations were all within normal limits except for the platelet count which was 65,000/cumm. Through the entire episode the patient had been compliant with his anticonvulsant medication of phenytoin (300mg/ day). A repeat platelet count in December 2019 was 55,000/cumm. The patient was asymptomatic with no episodes of mucosal or superficial bleeding.

In February 2020 he presented to our hospital with a deranged platelet count of 50,000/cumm. A thorough history was taken which did not reveal any inheritable cause of thrombocytopenia. There was no evidence of superficial bleeding, petechiae or ecchymosis. Complete physical exam including the neurological exam was unremarkable. We suspected a drug induced etiology as the probable cause of thrombocytopenia. Consequently, the dosage of phenytoin was reduced to 200 mg and folic acid was prescribed alongside once daily. Follow-up investigations in May 2020 revealed a platelet count of 100,000/cumm, therefore, confirming the suspicion of a phenytoin induced thrombocytopenia which was dose related.

Hematological side effects are rare with phenytoin1 but can be potentially fatal and serious. Phenytoin has been reported to induce various hematologic reactions, including thrombocytopenia and leukopenia. An intermediate epoxide metabolite of phenytoin is suspected as the cause of platelet destruction, which may occur via a complement-antibody reaction. Phenytoin is being used widely as a preferred anticonvulsant; hence the clinicians must recognize the rare but potentially serious adverse effect of thrombocytopenia. It may be discovered as an incidental finding on routine investigations and the patient may remain asymptomatic until the platelet levels fall below 20,000/cumm , requiring platelet transfusion.

Diagnosis of drug-induced thrombocytopenia2 may consist of identifying clinical symptoms (bruising, petechiae, bleeding), a careful evaluation of the causal relationship of the suspected causative drug, general laboratory investigation and platelet serology tests.

Drug-induced thrombocytopenia can be treated by withholding the causative drug, in severe cases associated with bleeding, by platelet transfusion. In our patient, the thrombocytopenia was dose related as evidenced by the increase in platelet count on reducing the dose of phenytoin. In a case report by Salzman et al3, a rapid rise in platelet count was associated with the administration of intravenous immunoglobulin in a 8 year old child with phenytoin induced thrombocytopenia and leukopenia.

In conclusion: Although rare, phenytoin induced thrombocytopenia is a serious complication which when recognized early can be reversed by either withholding the drug or decreasing the dose, as it is a dose related adverse reaction.

Reference

1. Holtzer CD, Reisner-Keller LA. Phenytoin-induced thrombocytopenia. Ann Pharmacother. 1997;31(4):435-437. doi:10.1177/106002809703100409

2. van den Bemt PM, Meyboom RH, Egberts AC. Drug-induced immune thrombocytopenia. Drug Saf. 2004;27(15):1243-1252. doi:10.2165/00002018-200427150-00007

3. Salzman MB, Smith EM. Phenytoin-induced thrombocytopenia treated with intravenous immune globulin. J Pediatr Hematol Oncol. 1998;20(2):152-153. doi:10.1097/00043426-199803000-00013