

Vancomycin induced Generalized Tonic Clonic Seizure- A Rare Case ReportS Rani¹, B Sharma², M Rawal³, R Saini⁴^{1,2,4}Department of Pharmacology, BPS, GMC, Khanpur Kalan, University of Health Sciences, Rohtak, Haryana, India³Department of Paediatrics, BPS, GMC, Khanpur Kalan, University of Health Sciences, Rohtak, Haryana, India**Correspondence Author:** S Rani , Department of Pharmacology, BPS, GMC, Khanpur Kalan, University of Health Sciences, Rohtak, Haryana, India**Type of Publication:** Case Report**Conflicts of Interest:** Nil**Abstract**

Vancomycin induced seizure is very rarely documented. Only one case report on vancomycin-induced hypertension with transient blindness and generalized seizure was reported in year 1992. Here we report a case of vancomycin induced generalized tonic clonic seizure in a three year old male child.

Keywords: Vancomycin, Generalized Seizure, DRESS, ventriculitis**Introduction**

Vancomycin is one of the commonly misused antibiotics in hospitals. It is used blindly despite of educating healthcare professionals about rational use of antibiotics. It is a commonly prescribed glycopeptide antibiotic that is used to treat various gram positive infections. Recent studies have shown a 10- to 20 fold increase in its use over the past 25 years [1,2]. Common adverse drug reactions related to vancomycin are ototoxicity, nephrotoxicity, neutropenia, fixed drug eruptions [3] and red man syndrome [4]. Apart from these adverse drug reactions it is also associated with drug reaction with eosinophilia and systemic symptoms (DRESS) syndrome, characterized by generalized skin rash associated with hypereosinophilia, lymphocytosis and internal organ involvement [5]. Vancomycin induced seizure have been rarely reported in literature. Hereby we are presenting a case report of

vancomycin induced seizure in a 3 year old male child. Reporting of such rare adverse events is an important part of pharmacovigilance because its helps in increasing awareness about the drugs which ensure their judicious use for the patients.

Case Report

A 3 year old male child was brought to Paediatric department with the complaint of fever, headache and pain in upper abdomen. Ultrasound of abdomen and thorax of child showed large left pleural collection with internal septations and pleural thickening. The patient had no previous history suggestive of seizure, drug abuse, drug allergy, hepatic and kidney damage. Blood samples were sent for investigations. Haemoglobin count of the patient was 10.4 g/dL. Other blood and urine investigations were within normal limits with pending culture investigation. Empirical therapy with antibiotics i.e. azithromycin (150mg i.v. B.D.), cefotaxime (750mg i.v. 6 hourly), amikacin (225mg i.v. O.D.) and linezolid (300mg i.v. B.D.) was prescribed to patient. But on 3rd day, all the antibiotics were discontinued except linezolid, as it was suspected that patient may be having methicillin-resistant staphylococci infection. So, vancomycin infusion (100mg i.v. 6 hourly.) and piperacillin/tazobactam (1.2g i.v. T.D.S.) were added along with linezolid injection on 4th day. The patient on 4th day complained of itching at the

site of drug administration which was followed by generalized tonic clonic seizure and excessive sweating. Vancomycin was suspected to be the reason for seizure and hence was stopped. Injection Chlorpheniramine (25mg) and injection Phenytoin (30mg over 30 minutes) were given as an immediate treatment. Assisted ventilation was also given with 100% oxygen. The patient recovered after 2-3 hours of treatment. Treatment was further continued for 7 days with linezolid (300mg i.v. B.D), piperacillin/tazobactam (1.2g i.v. T.D.S), phenytoin (40mg i.v. B.D.) and vitamin K(5mg i.v. B.D. for 3 days). The patient was in stable condition and no recurrence of seizure was observed.

Discussion

Seizures are one of the neurological disorders characterized by rhythmic muscle contractions, fatigue, jerking movements, loss of consciousness, etc. Any activity related to either an increase of excitatory neurotransmitters (GABA, Glycine) or use of convulsant drug (pentylene-tetrazol) may be linked with an epileptic seizures [6]. Drugs are one of the leading causes of seizures. Among them antibiotics, antihistaminics, anesthetics, anti-hypertensives, anticancer drugs, analgesics, muscle relaxants, antiemetics are known to induce seizure. Among antibiotics, penicillins and broad spectrum cephalosporins are the main culprits that can cause seizures and jerky movements.

Vancomycin, a glycopeptide antibiotic can cause a list of adverse drug reactions including ototoxicity, skin reactions, nephrotoxicity, neutropenia, etc. Some of the rare neurotoxic effects associated with vancomycin is ventriculitis[7].

Ventriculitis is diagnosed by the presence of clinical symptoms and a positive CSF analysis. The clinical symptoms of ventriculitis include fever and signs of meningitis (nuchal rigidity, decreased mental status, seizure, etc)[8].

In a single case report it was reported that vancomycin may cause generalized seizure [9]. Linezolid may cause complex partial seizure [10] and Piperacillin/tazobactam can cause myoclonic jerks [11]. Generalized seizure was observed in our case so vancomycin was suspected as the culprit of reaction.

When WHO-Probability scale was applied to assess causality in our case, the result was found to be "Probable". Hence it can be assumed that generalized seizures in the child occurred probably due to vancomycin.

Conclusion

The tendency of vancomycin to cause seizures is controversial as no such literature is available for the same. So there is a need for collection of large amount of data on vancomycin induced seizures so that more caution can be exercised while prescribing vancomycin.

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