



Case Report

Rapid Infusion of Vancomycin Induced Anaphylaxis Reaction

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Abstract

Vancomycin is a bactericidal drug which is produced by streptococcus orientalis. It may cause 2 types of reactions one is hypersensitivity reaction and RMS and other is anaphylaxis. The anaphylaxis reaction includes infusion related reaction. An ADR induced by rapid infusion of vancomycin in a 42 years old male patient was observed with Red Man Syndrome and swelling, scar of tongue and hence managed by immediate withdrawal of the drug at the department of general medicine of Vijayanagara Institute of Medical Science, Ballari.

Keywords: Red Man Syndrome (RMS), Vancomycin ADR, Anaphylactoid.

Introduction

Vancomycin is a bactericidal drug which is produced by streptococcus orientalis and is active against gram positive bacteria specially staphylococci and also those which are resistant to methicillin⁽²⁾. The mode of action is probably by inhibiting the cell wall synthesis. It binds to the peptidoglycan chain preventing the elongation and cross linking of the chain, as a result cell wall deficient/weak bacteria will be formed which undergo lysis and thus it is bactericidal. It is widely used against methicillin resistant staphylococcus aureus infections. It is associated with the adverse effects such as nephrotoxicity, ototoxicity, GIT disorders, haematological disorders⁽²⁾.

Vancomycin may cause two types of reactions, one is hypersensitivity reaction the red man syndrome and the other is anaphylaxis. The anaphylaxis reaction is an infusion related reaction consisting of pruritis, an erythematous rash involving the face, neck and upper torso. The anaphylactoid reaction is known as red man syndrome⁽³⁾. The red man syndrome was seen with rapid infusion of the drug due to the impurities found in vancomycin preparations but the reports of the syndrome was seen even after the improvement in the purity of vancomycin⁽¹⁾. Antibiotics such as ciprofloxacin, amphotericin B, rifampicin and teicoplanin and drugs that stimulate histamine release may also result in red man syndrome⁽⁴⁾. Respiratory arrest may occur if the vancomycin is administered again during

anaphylaxis. Hence, desensitization will be the only way to use vancomycin safely.

Discontinuation of vancomycin infusion and administration of diphenhydramine can stop most of the reactions. Slow intravenous administration of vancomycin may reduce the risk of infusion related adverse effects⁽²⁾.

Case Report

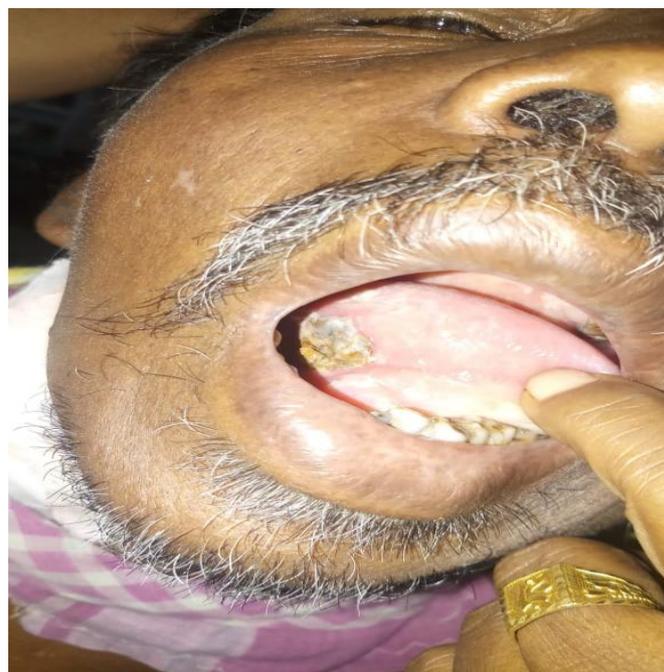
A 42 years old male patient presented with decreased urine output since 2 days and swelling of both lower and upper limbs since 1 day. The diagnosis was clear CKD on MHD with past history of Hypertension on medication with Tab. Amlodipine -5mg and also psychiatry patient not on medication.

Laboratory investigations are on first day Haemoglobin was 6.3mg/dl and on third was 6.1mg/dl, RBC was 2.21 million mcL on third day 2.17 million mcL and PCV 18.3% on first day ,on third day it was 19%, Total count on first day was 3,100 cells/cumm and on third day 2,600 cells/cumm. In Renal Function Test, Serum Creatnine found to be 6.8 mg/dl on first day, 6.2 mg/dl on second day, 7.1 mg/dl on third day, 9.2 mg/dl on fourth day. Serum Urea was 88 mg/dl, 81 mg/dl, 80 mg/dl, 55 mg/dl, 63 mg/dl, 68 mg/dl respectively from day one to day six. T3 was 0.28 g/dl and T4 4.6 ng/dl .

Treatment given was Inj. Ceftazidime 1 gm in 100ml NS IV from 8th day it is Antibiotic, used to bacterial infections, Inj.Vancomycin 500mg in 100ml NS once in a day, Antibiotic used to treat bacterial infection, Tab. Livogen was given twice in a day it is used to treat anemia, Tab. Folvite μ 5mg was given once in a day used to treat anemia, Tab. Shelcal 500mg was given once in day which is calcium carbonate, Inj.Sumol 100ml IV SOS, Tab. Sodamint 200 mg was given twice in a day it is used as supportive care and metabolic acidosis , Tab. Levothyroxine 12.5 μ g it was given once in a day used to treat hypothyroidism, Tab. Paracetamol 500mg used to treat fever, Tab.Pantoprazole 40mg was given twice in a day, used to treat gastric problems it is a Proton Pump

Inhibitor, Tab.Amlodipine was given once in a day, which is Anti-Hypertensive Agent, Inj.Ceftriaxone 1 gm, an antibiotic used to treat Bacterial infection, Inj.Lorazepam, a Benzodiazepine, used to treat Anxiety and trouble sleeping, Looze Enema, it is Lactulose used to treat severe constipation, Tab Risperidone it is Antipsychotic Drug, Tab.Trihexiphenidyl it is Anticholinergic drug used to treat Tremors, spasms and stiffness ,Tab. Clonazepam used to prevent and treat Seizures, Tab. chlorphenamine it is anti-histamine used to treat the symptoms of allergic rhinitis.Treatment was continued with Vancomycin.

After 7 days of therapy, vancomycin was started. On 5th days of vancomycin therapy the patient developed tongue swelling and difficulty in swallowing for which he was referred to ENT specialist, where the patient was undiagnosed, so the reaction was considered as Vancomycin Induced Anaphylactic Reaction.



Discussion

Red man syndrome is a common ADR of vancomycin. The reaction is characterized by flushing erythema and pruritis of face, neck and upper toes. Topical steroids and anti histamines can release most of its symptoms related to skin.

RMS can be prevented by administrating the vancomycin at rates less than 10mg/min. in patient requiring more rapid infusion, pre medication with an h1 anti histamines or a combination of h1 and h2 anti histamines also prevent this reaction. In this case vancomycin was administered on 7th day and on 9th day the patient developed swelling and pain in the tongue, redness in the face due to which he was referred to ENT department where the diagnosis was unclear. Then on keen observation it was understood that the reaction was an anaphylactic reaction due to the administration of vancomycin.

Conclusion

With the irrational use of vancomycin its adverse reactions are being unnoticed and it becomes necessary to report such ADRs which helps in preventing such adverse reactions. In this case it was noticed that the adverse reaction had occurred due to the administration of vancomycin and the drug was stopped immediately

Acknowledgement

Our sincere thanks to Dr. Bassy K Alias for her support for our study. Also, we are grateful to the patient & staff of Vijayanagara Institute of Medical Science, Ballari.

No Conflict of Interest

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