

Vancomycin Induced Redman Syndrome: A Case Report

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ABSTRACT

Vancomycin is a glycopeptide antibiotic active against gram positive bacterial infections. Most important adverse reaction with vancomycin is hypersensitivity reaction. It is of two types, one is anaphylaxis and other redman syndrome. Redman syndrome commonly manifests with pruritus, flushing and less

frequently with hypotension and cardiovascular collapse on intravenous infusion. Discontinuation of the intravenous infusion of vancomycin and administration of antihistamines such as diphenhydramine can abort most of the reaction. Herewith, presenting a case report of Redman syndrome with hypotension and cardiovascular collapse type.

Key Words: Vancomycin, RMS [Redman syndrome], Antihistamines, Antibiotic

INTRODUCTION

Vancomycin was first found by Kornfeld from soil and is naturally produced by *Amycolatopsis Orientalis*. It acts by inhibiting cell wall synthesis in Gram positive organisms. Vancomycin is usually restricted for use in the treatment of serious infection caused by methicillin-resistant staphylococcus aureus (MRSA) and multidrug resistant staphylococcus epidermis (MRSE), for treatment of pseudomembranous colitis (relapse or unresponsive to metronidazole) or surgical prophylaxis for major procedures involving implantation of prosthesis in institutions with high rate of MRSA or MRSE [1]. Vancomycin can cause two types of hypersensitivity reactions i.e. RMS and anaphylaxis [2]. Most common hypersensitivity reaction associated with vancomycin is RMS and incidence varies between 3.7% and 47% in infected patients. The RMS is caused due to degranulation of mast cells and basophils, resulting in the release of histamine independent of preformed IgE or complement. RMS is infusion related reaction peculiar to vancomycin [3] but can also be seen with other antibiotics [4] [e.g. Ciprofloxacin, Amphotericin-B, Rifampicin and Teicoplanin] or other drugs which releases histamine. RMS occurs especially when infusion is given over less than one hour and incidence being 5–13% of patients. The signs and symptoms of RMS are from mild pruritis and upper body flushing to a dramatic hypotension and cardiovascular collapse. These signs and symptoms would appear about 4–10 minutes after starting the infusion or may begin soon after completion. These manifestations can be relieved by antihistamines. Administration of diphenhydramine before starting vancomycin infusion can prevent the occurrence of RMS with first dose of vancomycin [5]. If RMS appears, vancomycin infusion should be stopped immediately. To abort most of the reactions, a dose of 50mg diphenhydramine hydrochloride is given intravenously or orally. Further hypotension will require intravenous fluids and if severe vasopressors may be needed.

CASE REPORT

A male patient aged 60 years underwent Extra Capsular Cataract Extraction (ECCE) with Intraocular Lens implantation under local anesthesia for cataract (Right eye). He was shifted to post operative intensive care unit after cataract surgery. The vital signs were normal.

Routine investigations done pre-operatively such as Hb-11g%, RBC-4.9million/cumm, TLC-8,200/cumm, ESR-8mm/1st hr, Clotting Time-3mins, Bleeding Time-6mins, FBS-106mg/dl, PPBS-134mg/dl, DLC, ECG, Chest X-Ray, Renal and Liver function tests were within normal limits. The patient was a known case of diabetes mellitus and was on insulin since 10 years. There was no history of smoking, alcohol, hypertension and drug allergy. Since the patient was known diabetic and keeping in view of hospital acquired infections such as MRSA, he was prescribed vancomycin 1gm intravenous infusion over one hour every 12th hourly. As soon as first dose of vancomycin was started, patient complained of dyspnea and chest pain and was about to collapse. On examination, pulse was feeble, pulse rate 50 per minute and fall in blood pressure [80/50 mm Hg]. Immediately vancomycin infusion was stopped and diphenhydramine 50mg was given intravenously with i.v. fluids. Patient recovered thereafter.

DISCUSSION

RMS was common in the past due to impurities in vancomycin preparation. This is the reason for the drug to be nicknamed as "Mississippi mud" [6]. However reports of RMS continued even after improvements in the compound purity [7]. RMS is mainly due to histamine release. The extent of histamine release is proportional to the amount and rate of vancomycin infusion [8]. Levy et al [9] have shown that there was no association between concentration and the occurrence of RMS suggesting that this is an idiosyncratic and not a concentration dependent phenomenon. However the incidence of RMS can be reduced either by pretreatment with antihistamines or by slow intravenous longer infusion time (atleast 1hour) [10]. This case may be of idiosyncratic type.

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