A Case with Red Man's Syndrome

Kırmızı Adam Sendromu: Olgu Sunumu

Kırmızı Adam Sendromu / Red Man's Syndrome

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Özet

"Kırmızı adam" sendromu vankomisin tedavisinin bilinen en sık yan etkilerinden biridir. Halen bu yan etki mekanizması üzerinde tartışmalar bulunsa da belirtiler doz ayarlaması ve antihistaminiklerle azaltılabilir.Yazımızda koroner arter cerrahisi sonrası mediastinit oluşan ve vankomisin tedavisi altında "kırmızı adam" sendromu gelişen 50 yaşındaki olgu sunulmuştur. Tedavide kortikosteroid ve antihistaminik başlanmış, ilaç infüzyon hızı azaltılmış ve vankomisin dozu bölünerek verilmiştir.

Anahtar Kelimeler

Vankomisin; Sendrom; Yan Etkiler

Abstract

"Red man's" syndrome is one of the common side effects of vancomycin treatment. Although some controversies are still exist on the mechanism of this side effect, the symptoms could be diminished with modification in dose regimens and antihistaminics. In this report, we present a case of 50-year old man who developed "red man's" syndrome with vancomycin treatment, which was given for mediastinitis following coronary artery bypass graft surgery. For treatment, corticosteroids and antihistaminics were given, drug infusion rate was decreased, and dose of vancomycin was divided.

Keywords

Vancomycin; Syndrome; Adverse Effects

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Introduction

Vancomycin, a glycopeptide antibiotic, has reliable antimicrobial activity against many gram-positive microorganisms which are resistant to beta-lactam antibiotics, thus is mostly used in the treatment of suspected or proven gram-positive bacterial infections particularly caused by methicillin resistant Staphylococcus aureus (MRSA). For example, vancomycin is used for the perioperative prophylaxis for bacterial endocarditis and prophylaxis or treatment of cerebrospinal fluid shunt-related infections in patients with penicillin or cephalosporin allergy [1,2]. Like many drugs vancomycin causes wide spectrum of advers events, including vancomycin-induced allergic reactions like anaphylaxis, drug-induced fever, eosinophilia, itchy and erythematous skin rashes, toxic epidermal necrolysis, vasculitis, neutropenia, nephrotoxicity, and red man syndrome [1–3]. "Red man's" or "red neck" syndrome and anaphylaxis are two types of hypersensitivity reactions caused by vancomycin. "Red man's" syndrome is a well-known hypersensitivity reaction which occurs during vancomycin and teicoplanin treatment [4]. Following rapid infusion of antibiotic, histamin release from the mast cells causes symptoms of "red man's" syndrome such as flushing, erythematous discoloration and pruritus over the face, neck, and upper part of the body accompanying with hypotension and myocardial depression [1–5]. Burning or itching erythematous lesions, agitation, dizziness, headaches, chills, fever, and perioral paresthesia are also described in this syndrome [3,4]. In this report, we present a patient who developed "red man's" syndrome with vancomycin treatment, which was given for mediastinitis following Coronary Artery Bypass Graft (CABG) surgery.

Case Report

A 50-year old man developed mediastinitis following on-pump CABG operation. He was observed intubated with mechanical ventilator in cardiac surgery intensive care unit. MRSA has been found in his tracheal aspirate and skin leakage. On the basis of antibiogram results, vancomycin was given 2x1 g/day in 100 cc 0.09% saline solution through one hour intravenous infusion. At the 4th day of treatment, disseminated or partly banded itchy and erytematous rushes accompanied with hypotension have been developed particularly at the upper part of the body (Figure 1). Following dermatological evaluation, "red man's" syndrome has been diagnosed. Prednisolone 0.5 mg/kg and diphenhydramine, an antihistaminic drug, have been added to patient's treatment. Vancomycin dose regimen has been rearranged as 4x500 mg/day, and the infusion rate was doubled. The red rushes was initially transformed into brownish color in a week and disappeared with desquamation in three weeks (Figure 2). Treatment was continued for 14 days. The patient was discharged at 28th postoperative day with whole body in brownish color.

Discussion

"Red man's" syndrome has a relatively high incidence with intravenous administration of vancomycin, but it also occurs with oral or intraperitoneal administration [3,4]. The incidence of this syndrome is reported to be 3-47% of patients, and 90% of healthy volunteers in different studies [4]. Differences in vancomycin doses or infusion rates effects the incidence and severity of the syndrome [6]. Symptoms can relieve when the infusion rate is decreased. To be protected of this syndrome, the infusion rate should be slower than 10 mg/min, and the drug should be given in 50 cc or 100 cc isotonic saline solution. The treatment of "red man's" syndrome is symptomatic. Corticosteroids may be used when antihistaminic are not effective. Treatment with combined H1 and H2 receptor antagonists is more effective than single antihistaminic therapy. Corticosteroids and antihistamines can be used together for severe cases. Hypotension should be treated with intravenous fluid infusions and rarely with inotropic drugs.



Figure 1. Erythematous and itchy rushes at the upper part of the body.



Figure 2. Brownish and desquame rushes at the upper part of the body.

In our case, we decreased the drug infusion rate and divided the dose of vancomycin into four times a day. We used both corticosteroids and antihistaminics for relief of symptoms and inotropic drugs to treat the hypotension.

As a conclusion, "red man's" syndrome is one of the common side effects of vancomycin treatment. Although some controversies are still exist on the mechanism of this side effect, the symptoms could be diminished with modification in dose regimens and antihistaminics. Teicoplanin and linezolid may be alternative to vancomycin in cases with "red man's" syndrome.

Competing interests

The authors declare that they have no competing interests.

References

1. Hung YP, Lee NY, Chang CM, Lee HC, Wu CJ, Chen PL, et al. Tolerability of teicoplanin in 117 hospitalized adults with previous vancomycin-induced fever, rash, or neutropenia: a retrospective chart review. Clin Ther 2009;31(9):1977-86.
2. Apuya J, Klein EF. Stridor accompanying red man's syndrome following perioperative administration of vancomycin. J Clin Anesth 2009;21(8):606-8.
3. Bailey P, Gray H. An elderly woman with 'Red Man Syndrome' in association with oral vancomycin therapy: a case report. Cases J 2008;1(1):111.
4. Wilson AP. Comparative safety of teicoplanin and vancomycin. Int J Antimicrob Agents 1998;10(2):143-52.
5. Marik PE, Ferris N. Delayed hypersensitivity reaction to vancomycin. Pharmacotherapy 1997;17(6):1341-4.
6. Kwon HS, Chang YS, Jeong YY, Lee SM, Song WJ, Kim HB, et al. A case of hypersensitivity syndrome to both vancomycin and teicoplanin. J Korean Med Sci 2006;21(6):1108-10.

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