



Daptomycin Use in MRSA Bacteremia of a Patient with Myasthenia Gravis: A Case Report

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Abstract

Myasthenia gravis (MG) is the most common autoimmune disease affecting the neuromuscular junction and is characterized by ocular, bulbar, limb and respiratory muscle involvement. Some of the drugs may induce and exacerbate MG. Antibiotics are also one of the most important medication groups that may worsen MG and they should be used with caution in these patients with MG. Herein, we would like to share our experience about daptomycin use in Methicillin-resistant Staphylococcus aureus (MRSA) bacteremia of a patient with myasthenia gravis.

Keywords: Myasthenia gravis, bacteremia, daptomycin

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Introduction

Myasthenia gravis is the most commonly seen autoimmune neuromuscular disease and especially characterized by ocular, bulbar, limb and respiratory muscle involvement. The pathophysiology of myasthenia gravis is antibody-mediated T-cell attack on the acetylcholine receptor at the neuromuscular junction or on the postsynaptic membrane receptor structural proteins [1]. The myasthenic crisis is defined as evolving of respiratory failure at the end of existing illness because of a variety of reasons. Accompanying infections and antibiotic use may trigger myasthenic crisis [2]. Aminoglycosides, fluoroquinolones, macrolides and lincosamides are well-known antibiotics in this regard. Ampicillin, quinine, colistin, and tetracyclines have also been reported to aggravate myasthenic crisis [3]. The effect of daptomycin -one of the antibiotics developed in recent years- on myasthenic attack is unknown, yet. In this present case presentation, we would like to share our experience about daptomycin use in MRSA bacteremia of a patient with myasthenia gravis.

The Case

A 15-year-old male patient was diagnosed as myasthenia gravis 3 years ago. After the first attack about 3 months ago, mestinon and deltacortil were initiated. One month later, patient developed respiratory distress and hardship in swallowing. He was observed in the intensive care unit for three days, and then at the neurology department for fifteen more days. He was transferred to the intensive care unit again due to the third attack after fifteen days.

On the fifth day of follow-up, his fever was 38.5°C, WBC count and CRP levels were higher than normal [WBC 16.800 /mm³ (Normal: 4000-10000/mm³) and C-reactive protein (CRP) 8 mg/dl (Normal: 0-0.8 mg/dl)]. The plasmapheresis catheter was withdrawn after detection of pus at the catheter entry-site, and vancomycin therapy was initiated at the dose of 2x1 g/day. Drug hypersensitivity with systemic symptoms (tachypnea, and hypotension) were observed after the first dose of vancomycin therapy, so we switched to daptomycin therapy (1x350 mg/day). Cultures from the catheter tip and blood yielded MRSA. The patient received a two-week treatment of daptomycin without any complications. Creatinine kinase (CK) monitoring was done and there was no increase in CK levels. His clinical condition improved and he was discharged after the treatment had been completed successfully.

Discussion

Myasthenia gravis is a disease that leads to difficulties in antibiotic use in the clinical practice. Because of catheters used for IV treatments (IVIG, plasma), and for respiratory support (intubation) especially during attack periods, patients are at risk for infections with resistant microorganisms [4]. Daptomycin – a cyclic lipopeptide, which has been approved as an effective agent in treatment of skin and soft tissue infections, and bacteremia caused by MRSA, has recently been used in clinical practice with success [5]. We did not come across with any evidences in the literature about daptomycin use in patients with myasthenia gravis. In the case of our patient, we did not record or witnessed any side effects related to daptomycin, neither any daptomycin and mestinon drug interactions nor triggering of myasthenic crisis. As a result, daptomycin may be a reliable agent to use in the treatment of Gram positive infections in patients with myasthenia gravis, who may require intensive care support, and catheter access for parenteral therapy, particularly during myasthenic attacks.

Transparency declarations: None to declare

Patient Consent: Written informed consent was taken from the patient. No need for ethics committee approval.

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