Case Report

Linezolid-induced dental hyperpigmentation in an adult male being treated for an ulcer caused by atypical mycobacteria

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Abstract

Mycobacteria are intrinsically resistant to most antibiotics as a result of multiple mechanisms. Linezolid, a member of the oxazolidinones, is a newer class of synthetic antimicrobials which is frequently used to treat mycobacteria. Here, we report a case of a patient with an ulcer on the right arm, caused by atypical mycobacteria, who presented with discoloration of both the upper and lower teeth after being treated with linezolid for a period of 2 months. On detailed evaluation, the patient was found to have linezolid-induced dental hyperpigmentation. This is the first case reported ever in an adult having linezolid-induced dental hyperpigmentation.

Keywords: Atypical mycobacteria, dental hyperpigmentation, drug-induced teeth discoloration, linezolid

Introduction

Skin infections are usually caused by rapidly growing atypical mycobacteria acquired as a result of skin contamination from surgical instruments, injections, and other procedures. These infections are typically accompanied by painful, erythematous, draining subcutaneous nodules and are usually not associated with fever or systemic symptoms.⁰

Linezolid has been used in combination with other second- and third-line drugs to treat patients with tuberculosis caused by multidrug-resistant (MDR) strains.⁰ Linezolid inhibits protein synthesis by preventing formation of the ribosome complex that initiates protein synthesis. It has a unique binding site which is located on 23S ribosomal RNA of the 50S subunit which results in no cross-resistance to other drug classes.

Case Report

A 30-year-old male presented to our outdoor department with discoloration of both the upper and lower teeth for the past 2 weeks. On taking history, he told that he had developed an ulcer on the dorsal aspect of the right forearm for 3 months. It had been diagnosed as a case of ulcer caused by atypical mycobacteria, and for this he was on tablet linezolid 600 mg twice daily and tablet moxifloxacin 400 mg once daily for 2 months. There was no history of such pigmentation before the onset of therapy, and no history of trauma or intake of any other drugs. He also had no history of diabetes and hypertension. The patient denied any recent or past smoking history or increase in intake of tea, coffee, or alcohol that could have stained the teeth. On local examination of mouth, his oral hygiene was good.

On general examination, his vitals were stable; there was no pallor, icterus, cyanosis, clubbing, and edema. Abdominal, cardiovascular, respiratory, and neurological examination was unremarkable.

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Investigations revealed the following: Hb 12.8 mg/dL, total leukocyte count 6800 mg/dL, polymorphs 68%, lymphocytes 27%, eosinophils 2%, monocytes 3%, and platelet count 180,000/mm³. Liver function and kidney function tests were normal. HBsAg, HIV, and anti-HCV were nonreactive. There was no a hyperpigmented patch or discoloration in the oral cavity. On literature review, we found that linezolid was the causative agent for this discoloration of the teeth. According to Naranjo Causality Scale, the scale in this patient was 4. Figure 1 shows the dental hyperpigmentation in the patient.

Discussion

Since linezolid is an oft prescribed second-line drug in MDR tuberculosis and often preferred by the orthopedic surgeon for Methicillin Resistant Staphylococcus Aureus, the awareness of its cosmetic adverse effects will make the prescription pattern more informed among the primary care physician.

A number of adverse effects, including bone marrow suppression, irreversible peripheral and optic neuropathy, gastrointestinal effects, elevated liver enzymes, skin eruptions, and tongue discolorations, have been reported especially with the prolonged courses of therapy that are necessary for treatment of tuberculosis. A 600-mg (adult) dose administered once a day (half of that used for treatment of other bacterial infections) appears to be sufficient and may limit the occurrence of many of these adverse effects. Apart from these common side effects, the rarer side effects are still being reported. Among them are tooth discolorations that have been mostly reported in children.

There are two types of tooth discoloration. The stains that are present on the outer surface of the teeth and can be removed manually are known as extrinsic stains, whereas those which are deposited within the enamel of the tooth during its development are known as intrinsic stains. The teeth discoloration found with linezolid are of extrinsic type and reversible (i.e., they can be removed with extensive cleaning).

Poor dental care and consumption of certain beverages or food can be associated with discoloration or staining of teeth. Other drugs that can cause dental hyperpigmentation are doxycycline, tetracyclins, iron salts, ciprofloxacin, glibenclamide, and imatinibmesylate.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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Figure 1: Dental hyperpigmentation in the patient.