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Levofloxacin Induced Stomatitis: A Case Report

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ABSTRACT

Fluoroquinolones have many adverse effects include the gastrointestinal tract and the central nervous system, phototoxicity, and dermal toxicity. Levofloxacin has favorable adverse reaction profiles compared to other fluoroquinolones. Among the reported dermal toxicity there are few reports of toxic epidermal necrosis (TEN) in association with levofloxacin usage. However, there is no published study on levofloxacin induced stomatitis. Stomatitis is characterized by pain, inflammation, and ulceration in the oral cavity. A 36-year-old man was referred to the hospital for 'painful oral swelling and ulceration'. Before the admission due to fever and productive cough, 750 mg levofloxacin were prescribed for him. After 2 days of consumption, the patient experiences painful ulcerative and erythema lesions in the oral cavity that consistent with stomatitis. Due to the possibility of a drug reaction, levofloxacin was discontinued and no other antibiotic was used. Oral lesions were managed with a mouthwash and after 5 days, lesions recovered. To the best of our knowledge, this is the first case who developed stomatitis after two dose of levofloxacin and recovered just with topical therapy and without any systemic treatment. Caution is advised while administering these drugs.

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Introduction

Mucositis is painful inflammation or damaging of the mucous membranes lining the mouth and other parts of gastrointestinal tract (1). Clinically, the terms mucositis and stomatitis are often utilized interchangeably, but their pathology is different (2). Stomatitis is characterized by pain, inflammation, erythema, swelling and ulceration that occur in any tissue of the oral cavity (1, 2).

Stomatitis can affect any of the tissues in the mouth: cheeks, tongue, gums, throat, lips, and plate. It can disable a person to eat, talk, and sleep. Lesions usually last 4-14 days and often recur (1).Therefore, stomatitis includes a wide range of conditions, including oral mucositis (2).

Stomatitis varies in intensity from a grade 1 to a grade 4 and defined as follows: grade 1 is characterized by minimal symptoms with normal diet, not requiring medical intervention; grade 2 is symptomatic, patient can eat and drink a modified diet, respiratory symptoms requiring medical intervention but not interfering with activities of daily living; grade 3 affect the ability to eat and drink adequately, respiratory symptoms that can disrupt activities of daily living; grade 4 is symptomatic life-threatening conditions (3). Stomatitis can be caused by a variety of different factors. Often it will be due to injury, infection, allergy, or skin disease (1).

The fluoroquinolones are a large group of antibiotics which have a safe and effective profile. One study report that

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incidence of adverse drug reactions is 2–16.5% and varies among each class members (4) .The most common adverse reactions of fluoroquinolones involve the gastrointestinal tract (diarrhea, nausea, vomiting, bloating) and the central nervous system (headache, insomnia, agitation, dizziness). Other rare adverse effects are psychosis, seizures, hepatitis, acute renal failure, phototoxicity, toxic epidermal necrosis (TEN),tendon rupture, QTc interval prolongation, angioedema, and anaphylaxis.Levofloxacin was founded to has favorable adverse reaction profiles among other fluoroquinolones (5). So that in a review of approximately 130 million fluoroquinolone prescriptions, adverse drug reaction (ADR) rate of levofloxacin was the lowest rate of only 2%, compared to 2-10% for others and with most of theirs involving the gastrointestinal system (6). Among the reported dermal toxicity there are five reports of TEN in association with levofloxacin usage (5, 7-10).

However, there is no published information on levofloxacin induced stomatitis. We report here, for the first time, a case of stomatitis induced by levofloxacin. The patient gave informed consent.

Case Presentation

A 36-year-old man was referred to the hospital for 'painful oral swelling and ulceration'. Before the admission due to fever and productive cough, 750 mg levofloxacin prescribed for him. After 2 days of consumption, the patient experienced painful ulcerative and erythema lesions in the buccal and gingival mucosa, tongue and lip that consistent with grade 2 stomatitis (figure 1). Upon hospitalization, the patient's temperature was 38°c, and other vital signs were stable. All laboratory value was in normal ranges except erythrocyte sedimentation rate (ESR) was 89. Blood culture, viral marker evaluation including HIV-Ab, HCV-Ab, and HBS-Ag were negative. His medical history was negative and he doesn't take any other medicine. He didn't report any drug or food allergies. Due to the possibility of a drug reaction, levofloxacin was discontinued and no other antibiotic was used.

According to the advice of the dermatologist for the patient's lesions Burow's solution and triamcinolone, clotrimazole, and mupirocin combination in a topical ointment were used to alleviate lip's ulcer and drop of nystatin administrated as a conservative treatment for oral lesions. After 5 days, lesions recover. In the findings of the study, nothing was found for infectious disease.

Discussion

This case report highlights the stomatitis adverse effect of levofloxacin and its management strategies in a patient without any prior allergy and medical history.

Patient with stomatitis can experience pain, inflammation, erythema, swelling and ulceration in any structure of the mouth. This side effect can be related to adverse drug reactions (e.g., chemotherapy agent, antihypertensive medicine, antibiotics, anticholinergic and etc.), but may occasionally occur after radiotherapy, infection (viral, fungal, and bacterial) or in association with social habits like smoking or alcoholism (1).

For the treatment of stomatitis, a stepwise approach to symptom is following: using from coating agents such as bismuth salicylate, sucralfate, or other antacids, water-soluble lubricants for mouth and lips, topical analgesics, such as benzydamine hydrochloride, topical anesthetics, such as lidocaine viscous oral or parenteral analgesics, including opioids if needed, for pain not controlled with other mentioned therapy. Many pharmacies have formulary mouthwashes, which can be very effective for sore mouth due to stomatitis, include various combinations of antifungals, antibacterial, steroids, and local anesthetics. It is important to encourage patients to hydrate regularly and instruct them on different recommendations for general mouth care (1).

Figure 1. Levofloxacin associated stomatitis

The fluoroquinolones can cause many adverse reactions that involve the gastrointestinal tract and the central nervous system, acute renal failure, phototoxicity, QTc interval prolongation, and dermal toxicity (6). Most studies reporting dermatologic adverse reactions of the fluoroquinolones have focused on the more common phototoxic reactions.(4) However, four studies reported TEN (5, 7-10) and no study report stomatitis with fluoroquinolones.

To our knowledge, this case presents the first case of a patient

experiences stomatitis after levofloxacin administration and successfully treated with mouthwash. In this case, patient had improved gradually after offending drug were withdrawn and topical therapy was prescribed. Hence, caution is advised while administering these drugs, particularly in patients with a known history of hypersensitivity to these drugs.

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