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Drug Induced Hyperpigmentation Changes in a Chronic Kidney Disease

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ABSTRACT

Levofloxacin was well tolerated antibiotic which can be used as optimal choice for urinary tract infection. Is has good oral bioavailability with rare dermatological side effects (less than3%). Rare complications of levofloxacin are steven-johnson syndrome, photo toxicity, eosinophilia, fixed drug eruption, leucocytoclastic vasculitis. Here we report a 58-year-old woman with complaints of bluishgrey discoloration of rash presented over bilateral lower limbs a rare complication of levofloxacin occurring in 10-20% of patients.

Keywords: Levofloxacin, hyper pigmented changes, CKD

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INTRODUCTION

Fluoroquinolones are antibacterial drugs that belong to the quinolone family. They have a high bioavailability orally, a wide range of activity, and are well tolerated. Because of their unusual toxicity, some fluoroquinolones are not used in clinical practice. Ciprofloxacin, levofloxacin, and moxifloxacin were commonly utilised in clinical practise. They act by inhibiting DNAgyrase and topoisomerase IV, thus preventing bacteria from synthesizing deoxyribonucleic acid. The antibiotics ciprofloxacin and levofloxacin are used to treat urinary tract infections. Some fluoroquinolones are not utilised in clinical practise due to their exceptional toxicity. In clinical practise, ciprofloxacin, levofloxacin, and moxifloxacin were often used. Common symptoms which reported are nausea, diarrhea, vomiting, headache, hallucinations, delirium, insomnia, mood changes, tendinitis, retinal detachment, aortic dissection, rashes are uncommon. Four cases have been reported according to the review of a literature causing hyperpigmentation of skin mostly after use of more than one week of drug. Here we report a case of hyperpigmentation changes over bilateral lower limbs occurred following a five-day treatment of oral levofloxacin for cystitis in a 60 year old woman with chronic kidney disease Stage 5.

CASE REPORT

A 58-year-old woman came with complaints of bluishgrey discoloration of rash which was hyper pigmented presented over bilateral lower limbs since three days. Patient is known case of autosomal dominant polycystic kidney disease with stage 5 chronic kidney disease. She gives history of urinary tract infection for which she was treated with levofloxacin orally 750mg OD for five days. She gives no history of skin contact/ fever/ anticoagulant use/ sun exposure. She also gives history of rash since day 3 of antibiotic treatment. General and systemic examination was normal. Complete blood count was also normal. Skin biopsy was done, which revealed scattered deposits of brown-black pigment in dermal spindle cells with inflammation, rash. On high power filed showed brown pigmented cytoplasmic granules within the dermal macrophages. After I month on follow up patient rash was resolved with no residual changes.

DISCUSSION

Levofloxacin was well tolerated antibiotic which can be used as optimal choice for urinary tract infection. Is has good oral bioavailability with rare dermatological side effects (less than3%). Rare complications of levofloxacin are steven-johnson syndrome, photo toxicity, eosinophilia, fixed drug eruption, leucocytoclastic vasculitis. Only 10 – 20% cases showed acquired drug interaction like skin rash, such as in this case. In tetracycline tigecycline and polymixin have showed such reactions. Among quinolones levofloxacin and pefloxacin have reported few cases of hyper pigmented rashes. Pathophysiology includes due to the iron oxide and hydroxide presented in levofloxacin which were excreted through renally, as the patient is known

case of chronic kidney disease. As the standard dose patient should be given 1000mg for five days, but here the patient has taken 3750 mg for 5 days which might be leading to precipitation of intracellular iron chelate complexes, metabolite deposits in macrophages. Also leading to raised melanin synthesis intracellularly. After the patient has stopped treatment, skin lesion improved in one month. Discontinuation of the drug is the therapy for the levofloxacin induced pigmentary changes, which has been noted in the case reports also.

CONCLUSION

In a CKD patient, we present an unusual levofloxacin side effect. In the CKD cases, this case study emphasizes the need of modifying dosages accordingly for renally excreted drugs. Furthermore, due to over doses, CKD patients may show pigmentary alterations sooner than the normal kidney function patient. While such side effects can be reversed by stopping the medication, a new regimen based on the antibi gram must be explored in such situations.

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