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Case Report

A case of nevirapine-induced exfoliative dermatitis in an immunocompromised patient: a case report

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ABSTRACT

Nevirapine is a non-nucleoside reverse transcriptase inhibitor used as one of the first-line drugs for the highly active antiretroviral therapy (HAART) in human immunodeficiency virus positive patients. The side effects range from skin rashes to fulminant hepatotoxicity. The most of the side effects are manifested in the first 6-10 weeks indicating a need for close monitoring and follow-up of the patient in first few weeks. We hereby are presenting a case of a 41-year-old female who developed exfoliative dermatitis after 4 weeks of therapy.

Keywords: Highly active antiretroviral therapy, Human immunodeficiency virus, Exfoliative dermatitis, Non-nucleoside reverse transcriptase inhibitors, Nucleoside reverse transcriptase inhibitor

INTRODUCTION

Highly active antiretroviral therapy (HAART) has significantly improved human immunodeficiency virus (HIV)-associated morbidity and mortality.[1] The first-line treatment for HIV mostly consist of three drugs namely, nucleoside reverse transcriptase inhibitor (NRTIs) and non-nucleoside reverse transcriptase inhibitors (NNRTIs) or protease inhibitors (PIs), nevirapine (NVP), a dipyridodiazepinone, NNRTIS[2,3] is widely prescribed as a part of the combination therapy along with zidovudine and lamivudine for the treatment of HIV because of its efficacy

and good tolerability. It is used as one of the component of the ART therapy given to the patient. It is associated with the drug reactions which vary from skin rashes[4] to hepatotoxicity.[5] These skin rashes start within 5-10 weeks of therapy. The skin rashes are usually mild but in 0.5-2% cases[6] it can be severe in the form of exfoliative dermatitis. We are presenting here a case of exfoliative dermatitis in the HIV positive patient on HAART.

CASE REPORT

A 41-year-old female patient was diagnosed to be HIV positive and was put on ART including zidovudine 300 mg, lamivudine 150 mg, and NVP 200 mg. NVP was initially given as once daily dose and after 2 weeks dose of NVP was escalating to two tablets (400 mg) daily. After 4 weeks of treatment, patient noticed redness over whole body. History of fever was present, which was not associated with chills and rigor. There was no history of itching.

After 2-3 days, patient noticed fine white scaling of the skin, first over hands and then spreading to whole body over next 2-3 days leading to diffuse exfoliative erythematous pruritic patches (Figure 1). No h/o oozing/blistering. No oral/eye or genitals lesions were seen. On face fissuring of lips and angular cheilitis was present (Figure 2).

The patient had loose motion and vomiting, 3-4 episodes, no bleed or mucous. The family history of skin allergy, as well as history of contact to any allergen, was absent. Exfoliative dermatitis may be seen with drugs like carbamazepine, allopurinol, NVP, and gold. So, in this patient diagnosis of NVP induced exfoliative dermatitis was made.

Her mucocutaneous examination showed the involvement of chest, abdomen, trunk, upper limb and feet in the form of fine adherent, whitish scales at places. There were erosion and crusting of angles of mouth bilaterally.

Her hematological examination showed:

- Hemoglobin - 8.3 g%, total leukocyte count - 3100/mm^3
- Differential leukocyte count - N47/L 41/E3/M9
- CD4 count was 325 cells/mm^3
- Liver function test showed alkaline phosphatase 208 IU
- Serum glutamic oxaloacetic transaminase - 62 IU, serum glutamic pyruvate transaminase - 122 IU.

The NVP was stopped immediately and replaced by efavirenz. Patient was given urea lotion with moisturizer for local application and injection dexamethasone 6 mg morning and 4 mg in the evening along with antipyretics. Later on patient was shifted to oral T. prednisolone which was tapered in next 2 weeks and then stopped.

The skin lesions started resolving; there was no new lesion. The patient was advised CD4+ counts regularly and advised follow-up.

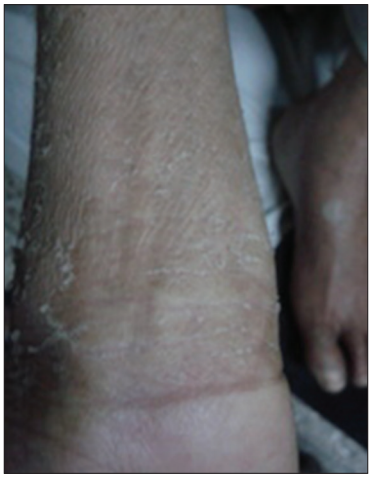

Figure 1: The hand and foot of the patient with exfoliations.

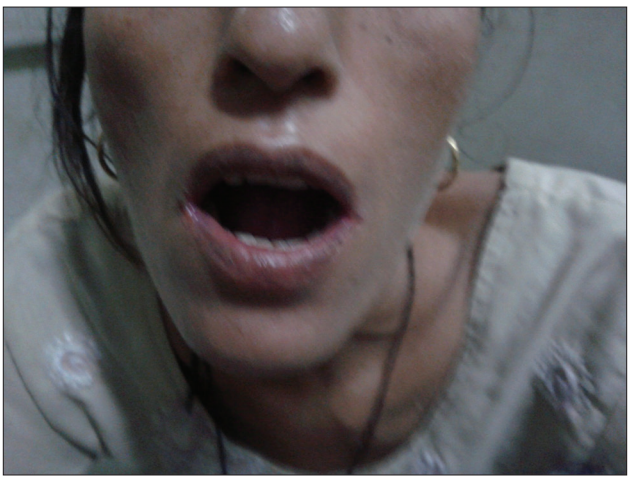

Figure 2: The fissuring of lips with cheilitis.

DISCUSSION

The first-line treatment for HIV, mostly consist of three drugs mostly consist of 2 NRTIs and 1 drug either NNRTIs or PIs. NVP is started at lower dose of 200 mg/day and after 2 weeks of therapy if no adverse reaction occurs dose is increased to 200 mg twice daily because it is a moderate inducer of CYP's including CYP 3A4, thus the drug induces its own metabolism which decreases the t ½ from 45 hrs following the first dose to 25-30 hrs after 2 weeks.[2] NVP shows adverse effect like nausea. Occasionally severe skin reactions and rise in transaminases may occur. NVP is hepatotoxic so it is replaced by efavirenz in patients who developed NVP toxicity which is found to be low hepatotoxic. Severe hepatitis frequently seen in female with CD4 >250 cells/mm^3 especially during pregnancy.[7] NVP is contraindicated in patient with hepatic dysfunction, pregnancy and in women likely to get pregnant.

Exclusion of skin diseases like atopic dermatitis, seborrheic dermatitis, contact dermatitis and psoriasis is most important. The family history of any skin disease must be ruled out

before make any diagnosis like contact dermatitis. There is a long list of drugs that causes exfoliative dermatitis the few very common drugs which causes this reaction are carbamazepine, allopurinol, NVP.

NVP induced skin exfoliated dermatitis is found to be more in HIV positive females as presented by our patient. So, as a physician our first aim should be to identify the skin reactions as early as possible related to NVP. And replace the NVP with efavirenz. As life-threatening skin reactions may be associated with NVP. These reactions are found to be associated with human leukocyte antigen B* 3505 allele.[8] So, its better to screen the patient for this allele, screening of this allele is cost effective. This positive allele patients must avoid NVP to avoid threatening skin reactions.

As in this case NVP was discontinued immediately, which is replace by efavirenz and started the symptomatic treatment with prednisolone, paracetamol 650 mg BD, and applied locally betamethasone 0.05% with glycerine lotion. The patient condition improved and patient discharged after 12 days.

According to Uppsala monitoring center causality assessment adverse effect can be considered as probable/likely.

CONCLUSION

As in this patient the history of any skin disease as well as family history was found to be negative.

From the list of drugs which causes the ED, the history of NVP was present and time relationship of 6 weeks was also present. Lastly as soon as diagnosis of NVP induced ED was made NVP discontinue immediately and patient replace by efavirenz (600 mg OD). Started the symptomatic treatment with intravenous fluid, steroids, analgesics, antipyretics, and surface anesthetic. The patient improved and discharge after 2 weeks.

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