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Metoprolol-induced Psoriasiform Drug Eruption: A Case Report

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Authors' contributions

This work was carried out in collaboration between all authors. Authors UGA, AA and AOS were involved in patients care and Authors UGA, AA wrote the first draft of the manuscript. Authors AOS and TCJ managed the literature searches. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Aim: We report the case of drug-induced psoriasiform eruptions in a middle aged known hypertensive and diabetic woman being treated for paroxysmal cardiac arrhythmias with metoprolol.

Case Presentation: A 58-year-old known hypertensive and diabetic woman with supraventricular tachycardia presented with itchy rashes in between the breast and weakness a day after switching propranolol for metoprolol succinate (Betaloc Zok) because of inadequate response. On physical examination, thick, and scaly erythematous papules of various sizes were found in between the breast. Routine laboratory test results were within normal limits. Metoprolol succinate was withdrawn, and improved on topical corticosteroids (1% hydrocortisone).

Discussion: The features of the case reported above are believed to be those of drug induced psoriasis because the lesions disappeared following the discontinuation of the drug.

Conclusion: We present a case of metoprolol induced psoriasiform eruption in a Nigerian woman. There was no cross-reactivity when other members of the class were prescribed for her.

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Keywords: Metoprolol; β -blocker; psoriasiform; drug eruption.

1. INTRODUCTION

Metoprolol is a cardio-selective beta₁-adrenoceptor blocker used in the management of hypertension, angina and cardiac arrhythmias. The anti arrhythmic effect of beta-blockers include reducing the heart rate, decreasing the spontaneous firing of ectopic pacemakers, slowing conduction and increasing the refractory period of the atrioventricular node [1]. The use may be associated with various cutaneous side effects, ranging from pruritus and photosensitivity rash to inducing or exacerbating existing psoriasis. There is no published case report demonstrating metoprolol induced psoriasiform drug eruption in a Nigerian. We report a psoriasiform drug eruption associated with the use of metoprolol succinate (Betaloc Zok).

2. CASE PRESENTATION

A 58-year-old female patient who is being followed up for hypertension and paroxysmal supraventricular tachycardia presented with itchy rashes in between the breast and weakness. She had been on propranolol which was prescribed for her a week earlier by her family Physician. The drug was switched to metoprolol succinate (Betaloc Zok) because of inadequate response. The complaints started approximately a day after receiving metoprolol. The physical examination erythematous showed thick and scaly papules of various sizes in between the breast, suggestive of a psoriasiform eruption (see Fig. 1). She had no personal or family history of psoriasis. Routine laboratory test results were within normal limits. She had been taking oral lisinopril, bendrofluazide, metformin and glibenclamide since 1998. Metoprolol succinate was withdrawn, and topical corticosteroids (1% hydrocortisone daily) was used until the lesions disappeared (see Fig. 2). The other drugs were continued because they were not thought to have caused the lesion. After the discontinuation of metoprolol, the psoriasiform eruptions began to gradually improve within 3 weeks, and atenolol was re-prescribed for the patient without cross reactivity. Based on these findings, the diagnosis of psoriasiform drug eruptions induced by metoprolol succinate was made.

3. DISCUSSION

Psoriasis is a common, chronic, immune-mediated, inflammatory condition that affects

between 0.6% - 4.8% of the general population [2]. Psoriasis however constitutes less than 1% of all skin disorders in western Sub-saharan Africa [3]. The disease present classically as a raised, well-demarcated, erythematous oval shaped plaques with adherent silvery scales. The scales results from the hyperproliferation of the epidermis, premature maturation of keratinocytes and incomplete cornification with retention of nuclei in the stratum corneum (parakeratosis). This will lead to thickening of the epidermis (acanthosis), with elongated rete ridges [4-6].



Fig. 1. Lesion when patient was on metoprolol



Fig. 2. Lesion when metoprolol was withdrawn

Several beta blocking drugs have been implicated in psoriasiform drug eruptions [7-11]. The mechanism of drug induced psoriasis is said

to be unclear but may be due to delayed hypersensitivity and impaired lymphocyte transformation with subsequent decrease in epidermal cyclic adenosine monophosphate (cAMP) and cell proliferation [12]. Other drugs that can cause psoriasiform drug eruption include biguanides and angiotensin enzymes inhibitors [13,14].

Metoprolol psoriasiform drug eruption consists of two types. The first, drug-induced psoriasis, the lesions withers/disappears when the drug is discontinued while discontinuation of the drug has little or no effect on the second type, drug-aggravated psoriasis. There will be no personal or family history of psoriasis and no nail or joint involvement in the former. Conversely, drug-aggravated psoriasis tends to occur in patients with previous history or genetic predisposition to psoriasis. Clinically, either new skin lesions show up in previously uninvolved areas or pre-existing lesions are aggravated [10,11].

Jensen et al. reported psoriasis induced dermatitis by Propranolol. In their case, the six patients developed lesions within approximately 10 months of latency period that resembled the cutaneous lesions seen during treatment with practolol. Oral provocation test to propranolol caused reappearance of the lesions in 4 of 5 of their patients [10]. Neumann et al. [11] also reported a case of psoriasiform skin eruptions due to long term use of metoprolol succinate.

Although, we did not carry out either oral provocation tests to demonstrate its re-occurrence or histology of the lesion, the case reported above is believed to be drug induced psoriasis. This is because our patient neither had personal history nor family history of psoriasis and the lesion disappeared following the discontinuation of the drug. Newer lesions did not also re-appear when atenolol was later prescribed for her. Moreover, knee and elbow joints and nail involvements were not observed in our case, although these sites are the most common sites involved in drug aggravated psoriasis. The non-involvement of the scalp and eyebrow makes it unlikely to be seborrheic dermatitis.

4. CONCLUSION

We describe a case of metoprolol induced psoriasiform eruption in a Nigerian woman and advise that adequate drug history be taken in

patients for whom metoprolol and other beta blocking agents are to be prescribed.

CONSENT

Authors have declared that full consent of the patient was obtained for the publication of this case report and its accompanying images.

ETHICAL APPROVAL

Ethical approval was sought from the Ethical and Review Committee of the hospital.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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