

Isotretinoin induced rash, urticaria, and angioedema: A case report

Zonunsanga

Department of Skin and VD, RNT Medical College, Udaipur, Rajasthan-313001, India

Corresponding author: Dr. Zonunsanga, E-mail: jrkos04@gmail.com

ABSTRACT

Isotretinoin is a vitamin A analogue, which is readily isomerized to tretinoin. It causes normalization of abnormal keratinisation. It also reduces sebum secretion. It also has anti-inflammatory as well as antibacterial properties. It has some adverse effects like teratogenicity, hypertriglyceridemia, pancreatitis, dryness of skin, cheilitis, altered liver functions etc. A 25 years old unmarried lady presented with acne vulgaris, who did not showed improvements with conventional (antibiotics) therapy was given isotretinoin. She developed maculopapular rash, urticaria and angioedema. Isotretinoin induced urticarial rashes and angioedema is rarely reported as far as our knowledge is concerned.

Key words: Isotretinoin; acne vulgaris; urticaria; angioedema

INTRODUCTION

Isotretinoin is a vitamin A analogue, which is readily isomerized to tretinoin. It causes normalization of abnormal keratinisation [1-4]. It also reduces sebum secretion. It also has anti-inflammatory as well as antibacterial properties [1-5]. It has some adverse effects like teratogenicity, hypertriglyceridemia, pancreatitis, dryness of skin, cheilitis, altered liver functions etc. Isotretinoin induced urticarial rashes and angioedema is rarely reported as far as our knowledge is concerned [6-9].

CASE REPORT

A 25 years old unmarried lady presented with acne vulgaris for which she was prescribed oral Doxycycline 100 mg bd along with topical clindamycin gel and topical benzoyl peroxide 2.5% gel. Since there was no significant response even after 2 months, doxycycline was stopped and azithromycin pulse therapy (Azithromycin 500 mg od for 3 days, repeat the same after every 10 days) for 1 month along with the topical medications which were given previously, which did not show much improvement. Finally she was given Isotretinoin (after liver function test, Haemogram

and lipid profiles were done and proved to be within normal range). After 5 days of medication, she started developing discrete to confluent, maculopapular rashes over bilateral upper extremities (Fig. 1), which was progressed to involve face (Fig. 2), neck (Figs 3 and 4), trunk and bilateral lower extremities (Fig. 5) within a period of 2-3 days. It was also associated with urticaria in some places, which was persisted for more than 24 hrs, along with oedema of face including lips, suggestive of angioedema. She was advised to stop all medications and was given oral prednisolone 2 mg for 7 days along with oral antihistamines. The urticaria and rashes began to resolve 3 days of starting prednisolone and complete clearance of the lesions took around 2-3 weeks. Provocation was not done as the patient reacted with urticaria and angioedema.

DISCUSSION

Isotretinoin is a first generation oral retinoid. It binds to the retinoid receptors. The retinoid receptors are of two families, RAR and RXR. RAR are paired with RXR whereas RXR may form homodimer with one another, or heterodimer with other receptors [1]. Upon binding of ligand, the receptor complex acts

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Figure 1: Maculopapular rash over dorsum of hands.



Figure 4: Maculopapular rash over neck.



Figure 2: Maculopapular rash over face



Figure 5: Maculopapular rash over legs.



Figure 3: Maculopapular rash over neck.

as transcription factor as well as antagonist of other transcription factors [1,6,7,10]. The resultant actions includes normalization of keratinization by regulating cell growth, differentiation and morphogenesis

of keratinocytes; decreases cell cohesiveness causing comedolytic and antikeratinizing effects; immunomodulatory and antiinflammatory actions; decreasing sebum production; antibacterial action by reducing follicular space and nutritional supply of *Propionibacterium acne* [4,7,9,12]. The oral bioavailability may be enhanced with food. It has half life of 10-20 hours, and completely cleared from the body with 1 month of stoppage of the drug. Some common adverse effects include teratogenicity, reduced night vision, dry eyes, lipid profile abnormalities especially hypertriglyceridemia, pancreatitis, altered liver functions, agranulocytosis and raised intracranial pressure [2,12]. Sweet's syndrome, hepatosplenomegaly, lymphadenopathy, myalgia, vasculitis, arthritis and inflammatory bowel diseases were also reported [6-8]. Besides, vitamin B 12 and folic acid level in the serum might be decreased after isotretinoin therapy [9]. There were some reports of association with myocardial

infarction, stroke and thromboembolic events with isotretinoin [10]. In addition, nail changes like transverse leuconychia had been reported [11]. The FDA approved indications include nodulocystic acne and recalcitrant acne. Other off-label indications include follicular disorders like rosacea, Irradenitis suppurativa etc; disorders of keratinization; Viral infection like Human papilloma virus infection [12]. It has category X status for pregnancy.

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