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Mometasone and Tretinoin Induced Exfoliative Dermatitis

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Abstract: A 21-year-old female with severe acne developed exfoliative dermatitis after applying a cream containing mometasone furoate (0.025%), hydroquinone (2%), and tretinoin (0.025%) at night. Within a day, she experienced redness and skin peeling, which was classified as a probable adverse drug reaction (ADR) based on Naranjo's, WHO-UMC, and Karch & Lasagna causality scales. The reaction was assessed as moderate, predictable, and preventable. Management included discontinuation of all medications and treatment with Prednisone 10 mg (1-0-1), Nevlon Cream (1-1-1) mixed with Fucibet Cream, and sunlight avoidance. This case highlights the risks associated with inappropriate corticosteroid and retinoid use in acne treatment and the importance of proper patient counselling.

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I. INTRODUCTION

Exfoliative dermatitis (ED) is a rare but severe dermatological condition characterized by widespread erythema and scaling, often leading to significant skin peeling. It can result from various causes, including drug reactions, pre-existing dermatoses, and malignancies. Among the drug-induced cases, topical agents, particularly corticosteroids and retinoids, have been recognized for their potential to induce severe skin reactions, especially when used in combination or without appropriate medical guidance. The estimated annual incidence of ED is approximately 1 in 100,000 individuals.[1] The primary ingredients in this Cream—tretinoin and mometasone furoate—are known to cause skin irritation, particularly when combined. Tretinoin, a retinoid, increases skin cell turnover, and mometasone furoate, a corticosteroid, can lead to skin thinning and heightened sensitivity. The combination of these two active ingredients likely triggered the exfoliative dermatitis in this case, emphasizing the importance of cautious use of such products, particularly when introducing multiple active agents simultaneously.[2]

II. CASE REPORT

A 21-year-old female presented with a chief complaint of severe acne on her face. She had been using the following regimen:

- Glocin Gel (1-0-0) - Topical
- Acne UV Sunscreen (1-0-0) - Topical
- Kozilite H Cream (0-0-1) - Topical
- Emolene Cream (1-0-0)- Topical
- Rota Cap 10mg (0-0-1) - oral
- Limcee 500 mg (1-0-1) - oral

During her treatment, she applied a cream containing mometasone furoate (0.025%), hydroquinone (2%), and tretinoin (0.025%) at night. However, after just one day of use, she developed redness and skin peeling.

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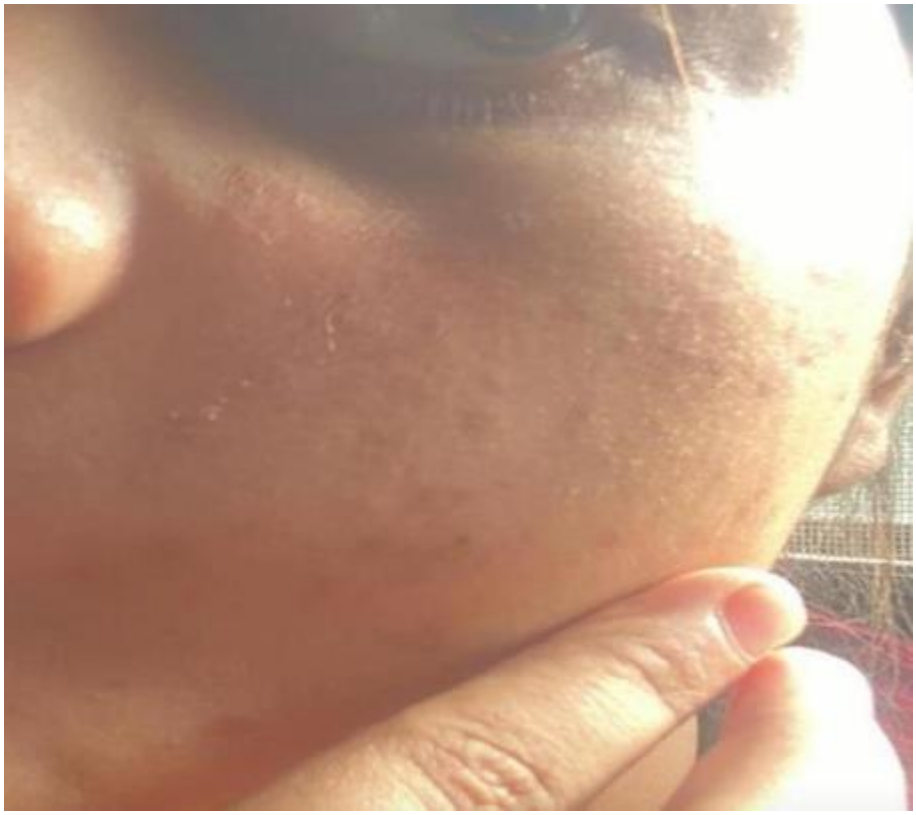

Fig:1: Exfoliative Dermatitis on Cheek

Table 1 ADR Analysis:

Suspected Agent	Suspected Reaction	Naranjo's Scale	WHO- Probability Scale	Karch and Lasagnas Scale
Mometasone furoate Tretinoin	**Exfoliative dermatitis**	Probable	Probable	Probable

Severity: Moderate Predictability: Predictable Preventability: Preventable **ADR management:**

For the management of the adverse drug reaction, the patient was prescribed Prednisone 10 mg (1-0-1), a corticosteroid to reduce inflammation and control the skin reaction. Additionally, she was advised to apply Nevlon Cream (1-1-1), a topical agent to soothe irritation and promote skin healing. Nevlon Cream was to be mixed with the prescribed Fucibet Cream (fusidic acid and betamethasone). All other medications were discontinued. Avoid sunlight.

III. DISCUSSION

Topical acne treatments require careful selection and sequencing to minimize adverse effects. In this case, the combination of mometasone furoate, hydroquinone, and tretinoin led to exfoliative dermatitis, characterized by redness and skin peeling within just one day of application. This highlights the risks associated with inappropriate corticosteroid and retinoid use, particularly in acne patients. Tretinoin, a potent retinoid, is known for its ability to promote skin cell turnover, but it often causes irritation, erythema, and peeling, especially when introduced without a gradual titration period. The concurrent use of mometasone furoate, a medium-to-high potency corticosteroid, may have masked initial irritation, but prolonged use can lead to skin thinning, increased sensitivity, and a rebound effect upon discontinuation. Additionally, hydroquinone, commonly used for skin lightening, can contribute to skin irritation and hypersensitivity reactions when combined with other strong dermatological agents. The rapid onset of symptoms and the known pharmacological effects of these agents suggest a strong causal relationship, as confirmed by Naranjo's Scale, WHO-UMC Scale, and Karch & Lasagna Scale, all of which classified the reaction as "Probable ADR." The severity was assessed as moderate, with predictability and preventability noted. Proper management of this ADR involved immediate discontinuation of all suspected medications and initiation of anti-inflammatory and barrier-restoring therapy, including Prednisone 10 mg (1-0-1) for systemic inflammation control and Nevlon Cream mixed with Fucibet Cream for localized skin recovery. Additionally, strict sun avoidance was advised to prevent further skin damage. This case underscores the importance of patient counselling, pharmacist oversight, and rational prescribing in dermatology. The improper use of potent agents like steroids and retinoids can lead to serious dermatological reactions, which could be avoided with appropriate dosing strategies, gradual retinoid introduction, and patient education on side effect management. Moving forward, practitioners should emphasize individualized treatment plans and ensure patients are well-informed about the potential risks of self-

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medication or pharmacist-prescribed regimens without physician supervision.

IV. CONCLUSION

This case highlights the importance of rational prescribing and patient education when using topical corticosteroids and retinoids. Unsupervised or inappropriate combinations can lead to severe skin reactions, as seen in this case. Early recognition and prompt discontinuation of the offending agents are crucial in preventing further complications. Physicians and pharmacists should provide proper counselling on the gradual introduction of tretinoin, the risks of corticosteroid misuse, and the importance of sun protection to minimize adverse effects.

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