Teprenone: The unexpected culprit behind erythroderma

Dear Editor,

Erythroderma, also known as exfoliative dermatitis, is characterised by diffuse erythema and scaling that involves more than 90% of the body surface area.[1] The most common cause is the exacerbation of pre-existing dermatoses, such as psoriasis and atopic dermatitis. Uncommon causes encompass cutaneous T-cell lymphoma and drug reactions to carbamazepine, allopurinol, dapsone, phenytoin, isoniazid, lithium, co-trimoxazole, and hydroxychloroquine.[2,3] Teprenone (geranylgeranylacetone), a widely recognised and effective gastrointestinal mucosal protector, had not been previously associated with severe drug eruptions. Here, we describe a case of erythroderma caused by teprenone.

A 74-year-old man presented with severe itchy plaques on the back two days after the oral administration of teprenone for gastritis. Within three days, the lesions had rapidly spread across his entire body. Physical examination revealed diffuse erythema with peeling on the limbs and trunk, which were covered with scales. The oral mucosal examination was normal [Figure 1]. Investigations showed a haemoglobin level of 91g/L, a platelet count of $94x10^9$/L, aspartate aminotransferase levels of 119 U/L and alanine aminotransferase levels of 107 U/L. Allergen-specific immunoglobulin E was 3980 IU/mL. Blood glucose, renal function tests, and urine examination results were normal.

Based on the history and clinical examination, a provisional diagnosis of drug-induced erythroderma was made. The biopsy from an erythematous scaly plaque showed a hyperplastic stratified squamous epithelium with spongiosis. The underlying dermis showed numerous blood vessels surrounded by lymphocytic infiltrate in the fibrocollagenous stroma. [Figure 2]. The Naranjo adverse drug reaction probability scale score was seven, and the combined assessment with the WHO-UMC Causality Assessment Scale suggested a "probable" association with teprenone. Therefore, teprenone was immediately withdrawn. The patient was treated with 80 mg (1 mg/kg) of daily methyprednisolone that was tapered completely over a period of 20 days and topical 0.05% topical fluticasone was applied twice a

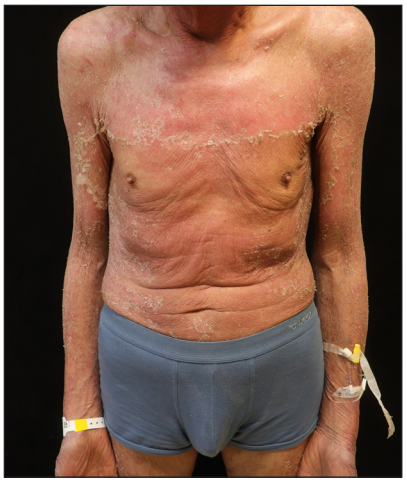

Figure 1: Diffuse erythema on the limbs and torso, accompanied by skin peeling and covered with a large number of scales involving more than 90% of the body surface area.

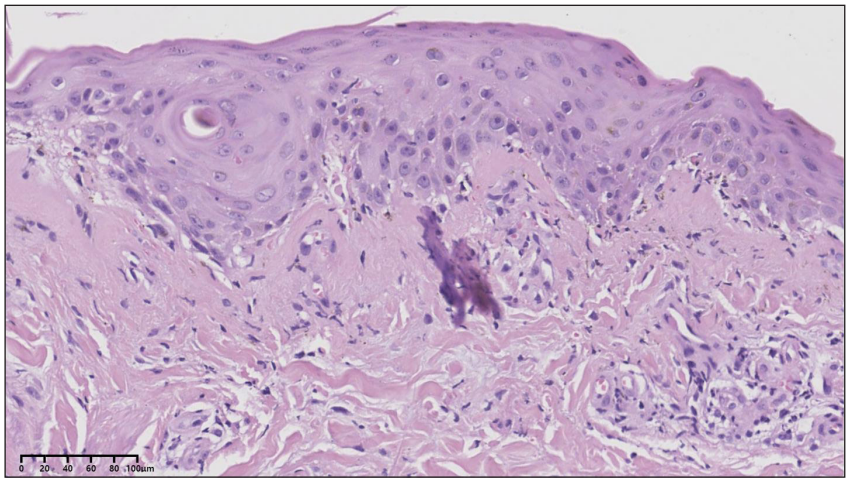

Figure 2: Hyperplastic stratified squamous epithelium with spongiosis. Underlying dermis shows numerous blood vessels surrounded by lymphocytic infiltrate in the fibrocollagenous stroma. (Haematoxylin and eosin stain, 200x).

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day. Post-treatment, the erythema and scales significantly subsided, and the itching completely disappeared [Figure 3]. There was no recurrence after 1 month of follow-up.

Drug-induced erythroderma is a less common but more severe form of drug-induced cutaneous adverse drug reactions, which can sometimes be life-threatening or result in disabling sequelae.[4] Compared with other types of erythroderma, drug-induced erythroderma is characterised by an acute onset and tends to improve more rapidly following timely identification and treatment.[2]

Teprenone is an acyclic isoprene compound that activates heat shock protein 70 and is widely used in Asian countries for the treatment of gastritis and gastric ulcers.[5] Teprenone is generally considered safe, and to our knowledge, there have been no reports of erythroderma caused by this drug to date. Therefore, given the widespread use of teprenone today, it is crucial to be aware of the rare but potentially serious drug complications that may lead to erythroderma.

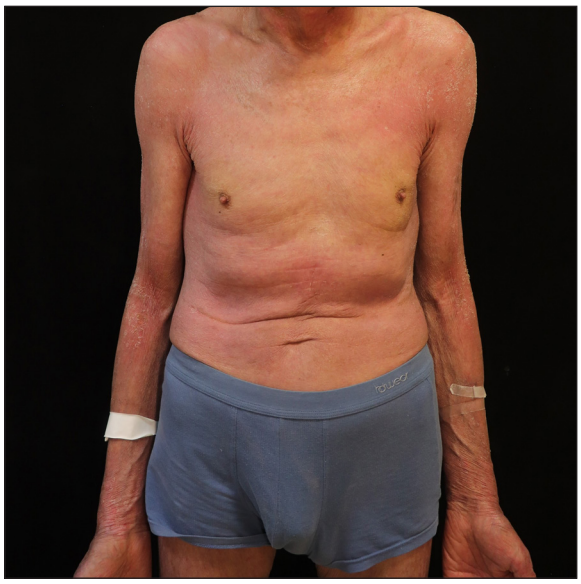

Figure 3: Post treatment (20 days) - significant reduction in the erythema and scaling.

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