

Ketoprofen-induced Photoallergic Reaction

Dear Editor,

Photoallergic reactions are classic T-cell-mediated or delayed-type hypersensitivity reactions of the skin in response to a photoallergen (or a cross-reacting chemical) to which a subject was sensitized in the past (1). The immune system recognizes the changes caused by ultraviolet (UV) radiation; it produces antibodies and causes inflammation of the skin in the exposed areas (2). Common photoallergic drugs and ingredients are included in some sunscreens, aftershave lotions, antimicrobials (especially sulfonamides), non-steroidal anti-inflammatory drugs (NSAIDs), diuretics, anticonvulsants, chemotherapy drugs, fragrances, and other hygiene products (1,3,4).

A 64-year-old female patient was admitted to the Department of Dermatology and Venereology with erythema and underlining edema on her left foot (Figure 1). A few weeks earlier, the patient had had a fracture of the metatarsal bones and since then she had been taking NSAIDs systemically every day to suppress pain. Five days before being admitted to our Department, the patient started applying 2.5% ketoprofen gel to her left foot twice daily and was frequently exposed to the sun. For the last twenty years, the patient had been struggling with chronic back pain and was frequently taking different NSAIDs (ibuprofen, diclofenac, etc.). The patient also suffered from essential hypertension and was regularly taking ramipril. She was advised to discontinue ketoprofen application, avoid sunlight, and apply betamethasone cream twice daily for 7 days, which led to complete resolution of the skin lesions in a few weeks. Two months later, we performed patch and photopatch tests to baseline series and topical ketoprofen. Only the irradiated side of the body where ketoprofen-containing gel was applied showed positive reaction to ketoprofen.

Photoallergic reactions manifest as eczematous, pruritic lesions, which may spread to involve other areas of the skin that were not previously exposed to the sun (4). Ketoprofen is a nonsteroidal anti-inflammatory drug composed of a benzoylphenyl propionic acid that is commonly used both topically

and systemically for the treatment of musculoskeletal diseases because of its analgesic and anti-inflammatory effects and low toxicity, but it is one of the most frequent photoallergens (1,5,6). Ketoprofen-induced photosensitivity reactions usually present as photoallergic dermatitis characterized as acute dermatitis with edema, erythema, papulovesicles, blisters, or erythema exudativum multiforme-like lesions at the application site 1 week to 1 month after the initiation of use (7). Depending on the frequency and intensity of sun exposure, ketoprofen photodermatitis may continue or reoccur up to 1 to 14 years after discontinuing the medication (6,8). Moreover, ketoprofen contaminates clothing, shoes, and bandages, and some cases of photoallergy relapses have been



Figure 1. Ketoprofen-induced photocontact allergic dermatitis.

reported that were induced by ketoprofen-contaminated objects after they were used again in the presence of UV radiation (5,6).

Due to their similar biochemical structure, patients with ketoprofen photoallergy should avoid using some drugs such as some NSAIDs (suprofen, tiaprofenic acid), antilipidemic agent (fenofibrate) and sunscreens based on benzophenones (6,9). Physicians and pharmacists should advise patients of the potential risks when topical NSAIDs are applied on the photoexposed skin.

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