DermNet NZ

Authoritative facts about the skin from the New Zealand Dermatological Society Incorporated.

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Drug-induced photosensitivity

Drug-induced photosensitivity or photosensitising medications can cause unexpected sunburn or a dry, bumpy or blistering rash on sun-exposed skin (face, neck, arms, backs of hands and often lower legs and feet). The rash may or may not be itchy. They can also cause onycholysis (nail plate lifting off the nail bed). This is known as photo-onycholysis.

What causes drug-induced photosensitivity?

Drug- and chemical-induced photosensitivity occurs when a drug or chemical agent combines with UV radiation to cause a phototoxic or photoallergic reaction. These agents are called photosensitisers and can be topical agents or medications that are taken orally. The following table lists the most common medications and topical agents causing photosensitivity.

Common Photosensitising Medications	
Antibiotics	• Tetracyclines • Fluoroquinolones e.g. ciprofloxacin • Sulfonamides
Nonsteroidal anti-inflammatory drugs (NSAIDs)	• Ibuprofen • Naproxen • Ketoprofen • Celecoxib
Diuretics	• Frusemide • Bumetanide • Hydrochlorothiazide
Retinoids	• Isotretinoin • Acitretin
Hypoglycaemics	• Sulfonylureas (e.g. glipizide, glyburide)
Neuroleptics	• Phenothiazines (e.g. chlorpromazine, fluphenazine) • Thioxanthenes (e.g. chlorprothixene)
PDT Pro-photosensitisers	• 5-aminolevulinic acid • Methyl-5-aminolevulinic acid • Photofrin
Other drugs	• Amiodarone • Diltiazem • Quinidine

	• Hydroxychloroquine • Enalapril • Dapsone
Common Photosensitising Topical Agents	
Sunscreens	• Benzophenones • Para-aminobenzoic acid (PABA) • Cinnamates • Salicylates
Fragrances	• Musk • 6-methylcoumarin
Miscellaneous	• 5-Fluorouracil (oral and topical) • Coal tar

What are the clinical features of drug-induced photosensitivity?

The clinical features of drug-induced photosensitivity vary according to the photosensitising agent involved and the type of reaction it causes in the skin. The reaction can be phototoxic and/or photoallergic. Phototoxic reactions result from direct damage to tissue caused by light activation of the photosensitising agent, whilst photoallergic reactions are a cell mediated immune response in which the antigen is the light-activated photosensitising agent. Photoallergic reactions occur less commonly than phototoxic reactions and are mostly caused by photosensitising topical agents. Although some oral photosensitising medications can cause photoallergic reactions, most cause phototoxic reactions. A handful of medications can cause both phototoxic and photoallergic reactions.

The clinical features differ between phototoxic and photoallergic reactions.

Reaction type	Clinical features
Phototoxic	• Skin reaction occurs minutes to hours after exposure to agent and light • Appears as an exaggerated sunburn reaction (reddening and swelling) • Vesicles, blisters and bullae may occur in severe reactions • May or may not be itchy • Less commonly, skin may change colour, e.g. blue-green pigmentation is associated with amiodarone • Reaction is limited to sun-exposed skin • Photo-onycholysis (separation of the distal nail plate from the nail bed) may arise with many oral photosensitising medications and may be the only sign of phototoxicity in dark-skinned individuals
Photoallergic	• Eczematous, itchy type reaction occurs 24-72 hours after exposure to agent and light • May spread to areas that have not be sun-exposed • Hyperpigmentation does not occur

Drug-induced photosensitivity

Phenothiazine

Phenothiazine

Quinine

What is the treatment for drug-induced photosensitivity?

The main goal of treatment is to identify the photosensitising agent and if possible to avoid it. In cases where medication is being taken to treat an existing condition and can not be discontinued, patients should be advised to follow sun protection strategies, including wearing sun protective clothing and using sunscreen.

Related information

References:

On DermNet NZ:

- Photosensitivity
- Sun protection
- Sun protective clothing
- Sunscreens
- Skin toxicity of chemotherapy drugs

Other websites:

- Drug induced photosensitivity - emedicine dermatology, the online textbook

Books about skin diseases:

See the DermNet NZ bookstore

Author: Vanessa Ngan, staff writer

DermNet does not provide an on-line consultation service.
If you have any concerns with your skin or its treatment, see a dermatologist for advice.