SOME medicines can make people sensitive to sun exposure. This is called 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.

Drug-induced photosensitivity occurs when a medicine combines with UV radiation to cause a phototoxic or photoallergic reaction. UV-A wavelengths are more likely to cause the reaction than UV-B wavelengths. It is not always the bright summer sun which is responsible; some people also react to sunlight in winter, and very sensitive people may even be affected by fluorescent lamps indoors.

This adverse reaction may increase the incidence of skin cancer and can be prevented with appropriate management.

**Phototoxic reactions**

Phototoxic reactions result from direct damage to tissue caused by light activation, occurring within minutes to hours after exposure. The rash appears as exaggerated sunburn with immediate reddening and swelling, which may or may not be itchy. Blisters and vesicles can occur in severe reactions. The reaction is limited to sun-exposed skin and appears to be dose-related.

Complications of repeated phototoxic injury include premature skin ageing and increased risk of skin cancer. Hyperpigmentation may remain after other symptoms have resolved.

In most cases of phototoxic drug eruption it is not necessary to stop the medication provided protection from the sun is possible.

**Photoallergic reactions**

Photoallergic reactions are immune-mediated responses and are less common than phototoxic reactions. This type of photosensitivity is more relevant to topical agents, such as ultraviolet filters in sunscreens, and topical anti-inflammatory drugs. Most oral medicines causing photoallergy also cause phototoxicity.

An itchy-type reaction resembling eczema or allergic contact dermatitis occurs 24 to 72 hours after exposure to the sunlight and medicine. The rash may spread to unexposed areas, and may be severe and prolonged. This reaction does not appear to be dose-related.

Medications suspected of causing photoallergic drug reactions should be discontinued, as even minimal amounts of further sun exposure can lead to reactions of increasing severity.

**Common photosensitising medications**

More than 300 drugs are associated with photosensitivity. Common photosensitising medications include:

- Antibiotics
- NSAIDs (e.g. ibuprofen, naproxen, ketoprofen, celecoxib)
- Diuretics (frusemide, bumetanide, hydrochlorothiazide)
- Retinoids (e.g. isotretinoin, acitretin)
- Antifungals (e.g. griseofulvin, voriconazole)
- Hypoglycaemics (sulfonylureas)
- Neuroleptics (chlorpromazine, fluphenazine, olanzapine, trifluoperazine)
- Amiodarone
- Azathioprine
- Diltiazem
- Quinine
- Quinidine
- Hydroxychloroquine
- Enalapril
- Dapsone
- 5-fluorouracil
- Coal tar
- St John’s wort

Sunscreens, fragrances, and occasionally soaps may cause photoallergic reactions.
Quinolones, chlorpromazine, amiodarone, thiazide diuretics, quinine, doxycycline and voriconazole photosensitivity reactions appear like sunburn. Photosensitivity reactions with naproxen, amiodarone, quinolone antibiotics and voriconazole may cause increased skin fragility and blistering. Calcium channel blockers may cause telangiectasia or small dilated blood vessels near the surface of the skin (spider veins).

Amiodarone and chlorpromazine reactions usually present with pricking or burning during exposure, and sometimes immediate redness (erythema), with oedema and urticaria with higher doses.

Distinctive blue-grey pigmentation is associated with amiodarone phototoxic reactions. Incidence of photosensitivity with amiodarone is common occurring in up to 30 to 50% of people prescribed the antiarrhythmic. Light sensitivity may persist for up to 4 months after the drug is stopped. Cutaneous pigmentation slowly fades after amiodarone is stopped, but may persist for months to years. The problem is related to both the dosage and the duration of drug therapy. Amiodarone is frequently commenced at a high dose in hospital, where sun exposure is limited. Therefore it is important the resident is protected from sun exposure when admitted or returning to aged care.

Chlorpromazine (Largactil) is the most common phenothiazine antipsychotic agent to cause immediate photosensitivity reactions, with an incidence of 2% to 3% when administered in high doses. The reaction is characterised by a burning, painful erythema within minutes of exposure to sunlight, either directly or through windowpanes. The redness may persist for more than 24 hours. Occasionally, a golden-brown or slate-grey pigmentation, predominantly of exposed areas, may be seen.

Several antibiotic classes commonly cause photosensitivity, including tetracyclines (doxycycline), quinolones (ciprofloxacin, norfloxacin), and sulphonamides (trimethoprim/sulfamethoxazole, sulfasalazine). The tetracycline minocycline is not generally associated with photosensitivity. Nearly all NSAIDs have been shown to cause inflammation when combined with UV radiation. Piroxicam and naproxen are the most frequently reported; whilst ibuprofen is not generally considered a culprit drug.

Photosensitivity with frusemide generally occurs with very high doses in people with chronic kidney disease. Hydrochlorothiazide may cause chronic eczematous photosensitivity that can last months after discontinuation of the drug. Statins (atorvastatin, fluvastatin, pravastatin, simvastatin) are known to cause both phototoxic reactions and photoallergic reactions. Sulfonylureas, used in the management of type 2 diabetes mellitus, only cause photoallergic reactions. Voriconazole, an antifungal agent, is associated with an increased risk of skin cancer. The changes that occur with long-term exposure resemble accelerated photo-aging.

Management
The main management goal is to avoid photosensitising medicines. Patient education is important. If avoidance is not appropriate, sun protection strategies must be followed. Sunscreens and protective clothing should be used. Pharmacists apply a cautionary advisory label to medicines known to cause drug-induced photosensitivity: Avoid excessive skin exposure to sunlight and sunlamps while being treated with this medicine.

A mild phototoxic reaction typically resolves without treatment and can be managed the same as sunburn, with analgesics, cooling creams or gels. Severe reactions may require oral or topical corticosteroids. Oral antihistamines have limited use for itch. Calamine lotion must be avoided as it is very drying to the skin.

Summary
Photosensitivity reactions can occur when sunlight or artificial forms of radiation interact with some commonly prescribed topical or systemic medications. Phototoxic reactions tend to be more common and resemble severe sunburn. Their onset can be rapid. Photo-allergic reactions tend to resemble allergic contact dermatitis and they can have delayed onset. Avoidance of the causative agent is recommended, or if not appropriate, sun protection strategies should be used whilst taking the medicine.


References

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