

Drug-Induced Photosensitivity

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Drugs Reported to Cause Photosensitivity Reactions¹⁻¹¹

Therapeutic Class	Drugs	Comments
Antihistamines	cetirizine (<i>Zyrtec</i>), cyproheptadine (<i>Periactin</i>), diphenhydramine (<i>Benadryl</i>), loratadine (<i>Claritin</i>), promethazine (<i>Phenergan</i>)	Reactions have been seen both with topical and systemic administration of antihistamines.
Anti-infectives	<u>Fluoroquinolones</u> : ciprofloxacin (<i>Cipro</i>), gemifloxacin (<i>Factive</i>), levofloxacin (<i>Levaquin</i>), lomefloxacin (<i>Maxaquin</i>), moxifloxacin (<i>Avelox</i>), norfloxacin (<i>Noroxin</i>), ofloxacin (<i>Floxin</i>) <u>Tetracyclines</u> : demeclocycline (<i>Declomycin</i>), doxycycline (<i>Vibramycin</i>), minocycline (<i>Minocin</i>), oxytetracycline (<i>Terramycin</i>), tetracycline (<i>Achromycin</i>) <u>Others</u> : azithromycin (<i>Zithromax</i>), capreomycin (<i>Capastat</i>), ceftazidime (<i>Fortaz</i>), cefazolin (<i>Ancef</i>), cycloserine (<i>Seromycin</i>), dapsone, ethionamide (<i>Trecator-SC</i>), isoniazid (<i>Nydrazid</i>), metronidazole (<i>Flagyl</i>), nalidixic acid (<i>NegGram</i>), pyrazinamide, sulfamethoxazole/trimethoprim (<i>Bactrim</i>), sulfasalazine (<i>Azulfidine</i>), sulfisoxazole (<i>Gantrisin</i>)	Lomefloxacin has higher incidence than other quinolones, no reports with gatifloxacin. Tetracyclines- reactions seen most often with demeclocycline. Cefazolin reaction was noted in one case report with concurrent gentamicin use.
Antifungals	flucytosine (<i>Ancobon</i>), griseofulvin (<i>Fulvicin, Gris-PEG</i>), terconazole (<i>Terazol</i>) voriconazole (<i>VFEND</i>)	
Antiretroviral	ritonavir (<i>Norvir</i>), saquinavir (<i>Fortovase, Invirase</i>), zalcitabine (<i>Hivid</i>)	Reactions seen in less than 2% of patients.
Antimalarial	chloroquine (<i>Aralen</i>), hydroxychloroquine (<i>Plaquenil</i>), pyrimethamine (<i>Daraprim</i>), pyrimethamine/sulfadoxine (<i>Fansidar</i>), quinine	Limited reports of reactions exist.
Antivirals	amantadine (<i>Symmetrel</i>), acyclovir (<i>Zovirax</i>)	About 1% incidence.
Antineoplastics	bexarotene (<i>Targretin</i>), capecitabine (<i>Xeloda</i>), dacarbazine (<i>DTIC</i>), epirubicin (<i>Ellence</i>), fluorouracil (<i>5-FU</i>), interferon alfa (<i>Intron A, Alferon-N</i>), methotrexate (<i>Mexate</i>), pentostatin (<i>Nipent</i>), procarbazine (<i>Matulane</i>), tretinoin, oral (<i>Vesanoid</i>), vinblastine (<i>Velban, Velbe</i>)	Incidence varies from 1% to 5% by agent.
Antiplatelet	clopidogrel (<i>Plavix</i>)	Only one case report.

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Cardiovascular	<p><u>Thiazide diuretics</u>: bendroflumethiazide (<i>Corzide</i>), chlorthalidone (<i>Thalitone</i>), hydrochlorothiazide (<i>Microzide</i>), hydroflumethiazide (<i>Diucardin</i>), indapamide (<i>Lozol</i>), methyclothiazide (<i>Enduron</i>), metolazone (<i>Zaroxolyn</i>), polythiazide (<i>Renese</i>)</p> <p><u>Diuretics, Other</u>: furosemide (<i>Lasix</i>), triamterene (<i>Dyrenium</i>)</p> <p><u>Antihypertensives</u>: captopril (<i>Capoten</i>), diltiazem (<i>Cardizem, Tiazac</i>), enalapril (<i>Vasotec</i>), nifedipine (<i>Procardia</i>), sotalol (<i>Betapace</i>)</p> <p><u>Statins</u>: fluvastatin (<i>Lescol</i>), lovastatin (<i>Mevacor</i>), pravastatin (<i>Pravachol</i>), simvastatin (<i>Zocor</i>)</p> <p><u>Other</u>: amiodarone (<i>Cordarone, Pacerone</i>), fenofibrate (<i>Tricor</i>), quinidine</p>	<p>Any combination product with hydrochlorothiazide has a risk of photosensitivity.</p> <p>Incidence of photosensitivity with amiodarone is about 10%.</p>
Anticonvulsants	<p>carbamazepine (<i>Tegretol</i>), felbamate (<i>Felbatol</i>), gabapentin (<i>Neurontin</i>), lamotrigine (<i>Lamictal</i>), oxcarbazepine (<i>Trileptal</i>), topiramate (<i>Topamax</i>), valproic acid (<i>Depakene</i>)</p>	<p>Incidence is generally low ranging from 0.1% to 1%.</p>
Antipsychotics	<p><u>Antipsychotics, Phenothiazines</u>: chlorpromazine (<i>Thorazine</i>), fluphenazine (<i>Prolixin</i>), perphenazine (<i>Trilafon</i>), prochlorperazine (<i>Compazine</i>), thioridazine (<i>Mellaril</i>), trifluoperazine (<i>Stelazine</i>)</p> <p><u>Antipsychotics, Other</u>: clozapine (<i>Clozaril</i>), haloperidol (<i>Haldol</i>), loxapine (<i>Loxitane</i>), olanzapine (<i>Zyprexa</i>), quetiapine (<i>Seroquel</i>), risperidone (<i>Risperdal</i>), thiothixene (<i>Navane</i>), ziprasidone (<i>Geodon</i>)</p>	<p>Phenothiazines-reactions most common with chlorpromazine (incidence of 2% to 3%).</p>
Antidepressants	<p><u>Tricyclic Antidepressants</u>: amitriptyline (<i>Elavil</i>), amoxapine (<i>Asendin</i>), clomipramine (<i>Anafranil</i>), desipramine (<i>Norpramin</i>), doxepin (<i>Sinequan</i>), imipramine (<i>Tofranil</i>), maprotiline (<i>Ludiomil</i>), nortriptyline (<i>Pamelor</i>), protriptyline (<i>Vivactil</i>), trimipramine (<i>Surmontil</i>)</p> <p><u>Selective serotonin reuptake inhibitors</u>: citalopram (<i>Celexa</i>), escitalopram (<i>Lexapro</i>), fluoxetine (<i>Prozac, Sarafem</i>), fluvoxamine (<i>Luvox</i>), paroxetine (<i>Paxil</i>), sertraline (<i>Zoloft</i>)</p> <p><u>Antidepressant, Other</u>: bupropion (<i>Wellbutrin</i>), mirtazapine (<i>Remeron</i>), nefazodone (<i>Serzone</i>), trazodone (<i>Desyrel</i>), venlafaxine (<i>Effexor</i>)</p>	<p>In the case of most of these drugs, incidence of photosensitivity has not been definitely attributed to the antidepressant.</p> <p>No reports noted with escitalopram, but included because structurally related to citalopram.</p>
Sedative/Hypnotics	<p>alprazolam (<i>Xanax</i>), chlordiazepoxide (<i>Librium</i>), zaleplon (<i>Sonata</i>), zolpidem (<i>Ambien</i>)</p>	<p>Incidence ranges from 0.1% to 1%.</p>

Therapeutic Class	Drugs	Comments
Analgesic Agents	<u>NSAIDs</u> : celecoxib (<i>Celebrex</i>), diclofenac (<i>Voltaren, Cataflam</i>), diflunisal (<i>Dolobid</i>), etodolac (<i>Lodine</i>), ibuprofen (<i>Motrin</i>), ketoprofen (<i>Orudis</i>), mefenamic acid (<i>Ponstel</i>), meloxicam (<i>Mobic</i>), nabumetone (<i>Relafen</i>), naproxen (<i>Anaprox</i>), oxaprozin (<i>Daypro</i>), piroxicam (<i>Feldene</i>), rofecoxib (<i>Vioxx</i>), sulindac (<i>Clinoril</i>), valdecoxib (<i>Bextra</i>) <u>Other</u> : cyclobenzaprine (<i>Flexeril</i>), dantrolene (<i>Dantrium</i>), sumatriptan (<i>Imitrex</i>)	
Hormones	Oral contraceptives, corticosteroids	
Antidiabetic Agents	<u>Sulfonylureas</u> : acetohexamide (<i>Dymelor</i>), chlorpropamide (<i>Diabinese</i>), glimepiride (<i>Amaryl</i>), glipizide (<i>Glucotrol</i>), glyburide (<i>DiaBeta, Micronase</i>), tolazamide (<i>Tolinase</i>), tolbutamide (<i>Orinase</i>)	
Skin Agents	benzocaine (<i>Americaine</i>), coal tar, hexachlorophene (<i>PHisoHex</i>), isotretinoin (<i>Accutane</i>), methoxsalen (<i>Uvadex, Oxsoralen</i>), minoxidil (<i>Rogaine</i>), tacrolimus (<i>Prograf, Protopic</i>), tazarotene (<i>Tazorac</i>), tretinoin, topical (<i>Renova, Retin-A</i>) <u>Sunscreen agents</u> : PABA, cinnamates, benzyphenones	Isotretinoin incidence is 5% to 10%.
Miscellaneous	chlorhexidine (<i>Peridex, Hibiclens</i>), gold salts, selegiline (<i>Eldepryl</i>), thalidomide (<i>Thalomid</i>)	
Vitamins	pyridoxine (Vitamin B6), Vitamin A	Based on case reports.
Dietary Supplements	bitter orange, chlorella, dong quai, gossypol, gotu kola, St. John's wort	Limited reporting of adverse reactions with dietary supplements makes this listing incomplete.

Many of the drugs listed in the preceding table were labeled as photosensitizing based on unclear data. Unclear and incomplete reporting of adverse drug reactions lead to this confusion. Chemicals that are planar, tricyclic, or polycyclic absorb ultraviolet light, which lead them to be classified as photosensitizer drugs.¹⁰

Types of Photosensitivity

Drug-induced photosensitivity may present in a variety of ways. Most reactions are generally classified as either phototoxic or photoallergic. Photoallergy is a relatively rare, immunological response, which is not dose-related. The allergy develops after multiple days of continuous exposure. It occurs when light causes a drug to act as a hapten, triggering a hypersensitivity

response. The reaction usually manifests as pruritic and eczematous.¹⁰⁻¹³

Phototoxic reactions are chemically-induced reactions when the drug absorbs UVA light and causes cellular damage. This reaction can be seen with initial exposure to a drug, may be dose-related, and doesn't demonstrate cross-sensitivity. It usually has rapid onset and manifests as an exaggerated sunburn. This reaction will be seen only on skin areas exposed to the sun.¹⁰⁻¹³

Management of Photosensitivity

Prevention of photosensitivity reactions is based on patient education. Patients should be educated to minimize sun exposure. Use of UVA-protective sunscreens and physical barriers such as clothing can provide additional light protection.

Sunscreens that provide UVA coverage include: avobenzone, dioxybenzone, oxybenzone, titanium dioxide, zinc oxide. Remind patients of the need to frequently reapply while in the sun. Patients should definitely be counseled to avoid sources of high-intensity light such as tanning beds. Additionally, as some reactions may be dose-related, a decrease in dose may be considered to help minimize the reaction or possibly selection of an alternative agent.

An acute attack may be managed in a number of different ways based on severity. A mild reaction may be handled similarly to a sunburn, with skin protectants and topical or systemic analgesics.¹² Patients may also benefit from application of cooling creams or gels. If patients have blisters that are broken, antibacterial creams may be necessary to prevent infection.¹⁰ Severe reactions may be handled by oral or topic corticosteroids.¹³ Antihistamines may also alleviate pruritus associated with reactions.

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