Caribbean Sunset

DUQUESNE UNIVERSITY
MYLAN SCHOOL OF PHARMACY

PIC QUESTION OF THE WEEK: 8/01/11

Q: What are the differences between chemically-induced phototoxic and photoallergic reactions?

A: *Phototoxicity* and *photoallergy* are two classifications of a chemically-induced reaction more commonly referred to as *photosensitivity*. This dermatologic reaction results from exposure to the sun after administration of select drugs and is characterized by erythema, edema, vesicles, and the formation of papules. The clinical distinction between the two types of photosensitivity can be difficult. Phototoxic reactions (the more common form) are non-immunologic responses in which medication produces an increased absorption of ultraviolet light resulting in direct tissue damage. This type of photosensitivity is associated with sunburn-like appearance on areas of skin directly exposed to sunlight and may develop upon first exposure to the chemical. Photoallergic reactions are immunologic in nature. In this case, the chemical is structurally altered by exposure to ultraviolet light and subsequently binds with dermal proteins. This newly formed antigenic complex stimulates the hypersensitivity (allergic) response. There is typically a delay (possibly 1-14 days) between initial administration of the drug and exposure to the sun and the onset of clinical signs of photoallergy. Chemically-induced photoallergic reactions present as an exaggerated sunburn that may be associated with the formation of vesicles, sloughing of skin, and pigmentary changes. Photosensitivity reactions are associated with a number of drugs including methotrexate, porphyrins, ACE inhibitors, fluoroquinolones, and phenothiazines. The accompanying table includes some of the most common agents implicated in photosensitivity reactions. Some drugs may produce both types of responses.*

Phototoxicity	**Photoallergy**
amiodarone	diclofenac
naproxen	griseofulvin
St. John's wort	ketoprofen
tetracyclines	sulfonamides
thiazide diuretics* and furosemide	sunscreens

Photoallergic reactions require discontinuation of the offending agent, while phototoxicity *may* be alleviated by dosage reduction. Topical and oral antihistamines, as well as corticosteroids, are effective in the treatment of photoallergic reactions, but are usually ineffective in treating phototoxicity. Ice packs may be used for symptomatic relief. Both types of photosensitivity can be prevented by using *broad spectrum* sunscreens with an SPF greater than 15. Other methods of prevention include avoiding excessive exposure to sunlight and the use of protective clothing.

References:

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Nicole M. Paronish and Erin L. Polis, Pharm.D. Candidates

The PIC Question of the Week is a publication of the Pharmaceutical Information Center, Mylan School of Pharmacy, Duquesne University, Pittsburgh, PA 15282 (412.396.4600).