CASE REPORT

A CASE OF SULFONYLUREA INDUCED PHOTOTOXICITY IN AN ELDERLY SUBJECT - A RARE CASE REPORT

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ABSTRACT: Sulfonylureas are insulin secretagogues used in the management of type 2 diabetes mellitus. The most common side effects are hypoglycemia and weight gain. Less frequent side effects are nausea, vomiting, cholestatic jaundice, agranulocytosis, generalized hypersensitivity reactions which include dermatological reactions. Dermatological reactions of sulfonylurea include photosensitivity. Drug induced photosensitivity is one of the important adverse drug reaction. Hence we would like to present here a case of sulfonylurea induced photosensitivity in an elderly diabetic male. He presented with rashes, itching, and intolerance to light and eruptions with exfoliation of skin over the sun exposed parts of the body.

INTRODUCTION: Sulfonylureas are insulin secretagogues used in type 2 diabetes mellitus. They are substituted aryl sulfonylureas. They differ by substitutions at the para position on the benzene ring and at one nitrogen residue of the urea moiety. The sulfonylureas are divided into two generations. The first generation sulfonylureas (tolbutamide, tolazamide and chlorpropamide) are rarely used now. The second generation sulfonylureas are more potent and include glimepiride, glipizide and glyburide. Main side effects of sulfonylureas are hypoglycemia and weight gain. Other less common side effects are nausea, vomiting, cholestatic jaundice, agranulocytosis, generalized hypersensitivity reactions which include dermatological reactions like photosensitivity¹. Photosensitivity is one of the neglected side effects of sulfonylureas and here we present a rare case of sulfonylurea induced photosensitivity.

CASE REPORT: A 60 year old male patient presented with rashes, itching, and intolerance to light with exfoliation of skin over the sun exposed parts of the body. He had developed phobia for exposure to light and avoided taking pictures with camera flash. He was known diabetic on treatment with tablet glyburide 5mg (sulfonylurea) and metformin 500mg twice daily since 2 years. The patient was treated with sunscreen lotion for his skin lesions, but showed no improvement even after 2 months. Later, upon review of his drug history, it was revealed that glyburide (sulfonylurea) caused phototoxicity, and was withdrawn. The patient was put on an alternate hypoglycemic drug combination of pioglitazone 15mg and metformin 500mg twice daily. He also continued sunscreen application and sun protection. He improved gradually within 15 days and this suggests that it is a case of sulfonylurea induced phototoxicity.

DISCUSSION: In 1942, Janbon and colleagues noted that some sulfonamides caused hypoglycemia in experimental animals. Soon thereafter, 1-butyl-3-sulfonylurea (carbutamide) became the first clinically useful sulfonylurea for the treatment of diabetes².

CASE REPORT

Sulfonamide anti-bacterial, as well as sulfa drug analogs (thiazide diuretics, hypoglycemic sulfonylureas and celecoxib) and dapsone have been reported to cause photosensitivity within the spectrum of both UVB and UVA³.

A photosensitivity reaction, occurring mainly on sun-exposed areas, is a delayed hypersensitivity reaction reflecting direct cellular damage produced by the photochemical reaction between a chemical photosensitizer and the appropriate radiation on the skin and is independent of dose and duration of exposure⁴.

Phototoxicity and photoallergy are different expressions of an abnormal skin reaction from the exposure to light, usually enhanced by endogenous or exogenous substances, which are selectively activated by solar radiation. UVA penetrates the skin more deeply and is absorbed by the chromophores which induce photodermatitis⁵.

The chromophore in an excited triplet state is reduced either by an electron or by a hydrogen transfer from a compound in the environment. This radiation results in the generation of highly reactive free radicals, whose subsequent attack on biological substrates result in phototoxicity⁶.

The management of drug photosensitivity involves first and foremost, the elimination of exposure to the chemical agents responsible for the reaction and minimization of sun exposure. The acute symptoms of phototoxicity may be ameliorated by cool moist compresses, topical glucocorticoid, and systemically administered NSAIDs⁷.

CONCLUSION: Drug induced photosensitivity is a frequent problem with a highly polymorphic clinical presentation and variations in the responsible agents. Therefore we must be highly alert to suspect the involvement of a drug that can induce photosensitivity. Consequently, such drug induced photodermatitis can be prevented by mere withdrawal of the causative drug and replacement with alternative drugs.

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CASE REPORT

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