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Drug Interactions in Dermatology, Part 2

By Jesse Hirner, MD

Drug	Interacting Agent	Mechanism	Effect	Comment
CYP450 Interactions				
Azole antifungals	Tacrolimus, sirolimus	Itraconazole and fluconazole inhibition of CYP3A4, fluconazole inhibition of CYP2C9	Increased blood tacrolimus and sirolimus levels	Decreased tacrolimus and sirolimus dose requirement. Terbinafine does not inhibit CYP3A4 and may be an alternative to azoles
Cyclosporine (CsA)	Erythromycin and clarithromycin (not azithromycin)	Erythromycin, clarithromycin and grapefruit juice inhibit CYP3A4	Increased plasma CsA concentration	Azithromycin's CYP3A4 inhibition is not clinically significant. CsA toxicity: renal impairment, hypertension, neurotoxicity, hypertrichosis, gingival hyperplasia, nausea, electrolyte abnormalities, hyperlipidemia
Pimozide	CYP3A4 inhibitors (azole antifungals, macrolides)		Increased pimozide levels	QT prolongation and potentially fatal arrythmias including torsades de pointes
Systemic retinoids	CYP3A4 inhibitors		Increased plasma retinoid levels	Increased risk of adverse retinoid effects
Additive Effects				
Cyclosporine	Psoralens with UVA light therapy (PUVA)		Increased risk of cutaneous squamous cell carcinoma	Use caution with cyclosporine in patients previously treated with PUVA
Dapsone	Sulfonamide antibiotics, trimethoprim, methotrexate (MTX)	Concomitant folate metabolic pathway inhibition	Increased risk of myelotoxicity	
	Antimalarial agents, sulfonamides	Increased oxidative stress	Increased risk of hemolysis, methemoglobinemia	
Systemic retinoids	MTX		Synergistic hepatic toxicity	Has been used in combination in severe psoriasis and pityriasis rubra pilaris
Topical Medication Interactions				
Tretinoin	Benzoyl peroxide (BPO)	BPO oxidizes tretinoin when applied together	Possible decreased retinoid efficacy	Adapalene is stable with BPO
Calcipotriene	Salicylic acid	Salicylic acid degrades calcipotriene on contact	Possible decreased calcipotriene efficacy	

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Drug	Interacting Agent	Mechanism	Effect	Comment
Miscellaneous Interactions				
Cyclosporine	MTX	Decreased MTX metabolism, renal toxicity from CsA may decrease MTX excretion, concomitant immunosuppression	Increased plasma MTX	Increased risk of myelotoxicity and other MTX adverse effects
Ketoconazole	Doxorubicin	Unknown	Sticky skin	Retinoids may also cause sticky skin
Acitretin	Ethanol	In the presence of ethanol, acitretin re-esterifies to etretinate		Etretinate's terminal half-life is 120 days. In the US, women must use contraception for 3 years after stopping acitretin

References

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