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Reports on Scientific Meeting

New non-steroidal immunomodulators for atopic dermatitis and other skin conditions

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Venue:	Sheraton Hotel, Hong Kong
Speaker:	Dr. John Koo, University of California
Organizers:	The Hong Kong Society of Dermatology and Venereology and the Hong Kong Paediatrics Society

Topical immunomodulators are potentially useful in a number of inflammatory dermatoses. Their effectiveness is however limited by the degree of cutaneous absorption. In atopic eczema, better penetration and clinical responses are expected at the eyelids, face and neck relative to the thicker palms and soles. Psoriasis has thick silvery scaling that impairs topical drug absorption and whether oral preparations are useful in its control awaits larger clinical studies. Topical immunomodulators may be superior to topical steroids for diaper dermatitis, as infants are particularly at risk of pituitary-adrenal axis suppression induced by the latter. In stasis eczema, poor nutrient supply and thinned skin increase the risk of skin atrophy from topical steroids, and topical immunomodulators may be superior.

The actions and side effects of topical steroid and immunomodulators were compared. Topical steroid inhibits T lymphocytes and affects a vast number of target cells. It inhibits collagen production by fibroblast and can cause skin atrophy and striae. It constricts blood vessels but dilates them leading to telangiectasia in the long term. Other known side effects include hypertrichosis, acneiform eruption, cataract, glaucoma and adrenal suppression. In contrast, topical immunomodulators are more specific in their actions. They inhibit calcineurin, an enzyme that dephosphorylates the nuclear factor of activated T-cells, and hence affect their transcription. Fibroblast and blood vessels are not affected thus skin atrophy and telangiectasia will not occur.

Pimecrolimus cream (1%) is one of the topical non-steroidal immunomodulators. Unlike steroid applications, pimecrolimus does not deplete cutaneous Langerhans cell. Cutaneous response to common antigens is therefore unaffected; hence pimecrolimus is less immunosuppressive than steroid. There are no evidence of mutagenicity, carcinogenicity and photocarcinogenicity with pimecrolimus. Systemic toxicity is infrequent as minimal amount of drug is absorbed through skin. It reduces pruritus of atopic eczema within the first week of treatment. Burning, which occurs in about ten percent of cases, is mild and transient. It is as efficacious as mid strength steroid and can be used in mild to moderate eczema.

Conventional topical treatment of atopic eczema involves emollients and steroids for flares. Steroid has the advantage of fast onset in action but in the long run carries the side effects mentioned

above. Pimecrolimus may have its role in eczema management as a controller agent. A controller agent is used on an ongoing basis to 'nip the dermatitis in its bud'. A strategy suggested by the speaker was to use topical immunomodulators at the onset of pruritus or sign of inflammation to break the itch-scratch cycle and returned to the use of steroid only if the inflammation became severe. Another strategy is the sequential therapy analogous to that in psoriasis treatment. In the acute stage, clearance is achieved by topical immunomodulators in the morning and potent topical steroid at night time. In the transitional stage, topical immunomodulators are used twice daily in weekdays and topical steroid at weekend. In the maintenance phase when the flare is under control, topical immunomodulators are used twice daily without topical steroid and patients can be maintained on topical immunomodulators alone or as required.

Learning Points:

Topical immunomodulators belong to a new group of compound that has a different side effect profile as compared with topical steroid. Pimecrolimus 1% cream has a potency equivalent to mid-strength topical steroid.