ABSTRACT
Treatment of Psoriasis: What's New?

Psoriasis is a chronic immune-mediated disease with predominantly skin and joint manifestations. It affects more than 125 million population worldwide. The prevalence is approximately 2% of the population. The age of onset occurs in two peaks: ages 20-30 and 50-60, but can be seen at any age. There is a strong genetic component. About 30% of patients with psoriasis have a first-degree relative with the disease.

The classification of psoriasis is based on its morphology. The plaque type is a well circumscribed scaly, erythematous plaques while the inverse/flexural type are lesions are located in the skin folds. The guttate type typically has an abrupt onset of small papules and plaques in a young patient with recent streptococcal infection. The erythrodermic type has generalized erythema and scaling involving nearly entire body surface area. The acute generalized pustular psoriasis (GPP) is a rare skin disorder with flares of widespread sterile pustules in a background of generalised erythema and inflammation, the pustules often coalesce together to form lakes of pus. The patient is generally ill, febrile and malaise. During the early days, psoriasis was regarded as an epidermal disease in which the cell involved was the keratinocyte. Epidermal hyperplasia in psoriasis was first observed in 1963, when Van Scott noted a significant increase in mitoses of psoriatic epidermis. Major paradigm shift occurred when cyclosporin were found to result in improvement of psoriasis in 1980s. Cyclosporine which acts specifically on T helper cells suppresses the development of psoriasis is evidence of immune system involvement.

Psoriasis vulgaris is an immune mediated disease Th-1/Th-17/Th-22 caused by T-cells and associated cytokines. The T cell activation starts with 2 autoantigen LL-37 and ADAMTSL5. Dendritic cells produces high level of IL-12 and IL-23. This drives Th-1, Th-17 and Th-22 cells, activate their cytokines and keratinocytes producing the inflammatory mediators. IL17 act on keratinocytes to produce chemokines, AMP and CCCL20.

All therapies that improve psoriasis reduce expression or signalling of this immune response axis. Our understanding of psoriasis and ability to treat this disease has evolved tremendously in the past few decades. The traditional therapeutic options available included topical agents, PUVA, NB-UVB Phototherapy, and systemic agents such as methotrexate, cyclosporin, and retinoids.

Biologic agents are important new treatment options for moderate to severe plaque psoriasis. The available biologics have excellent short term and long term efficacy and safety profiles. The newer agents that use this immune response are TNFα inhibitors (adalimumab/ infliximab), IL-12/IL-23 inhibitors (ustekinumab), IL-17 Inhibitors (secukinumab/ ixekixumab/brodalumab) and IL-23 Inhibitors (guselkumab/risankizumab). There are other emerging treatments for psoriasis. These are small molecules that target the interruption of the cellular signalling. Such signalling are critical to propagate the inflammatory response. Examples of such are the JAKs Inhibitors.

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