

Correspondence

Leprosy is teaching us the immunopathogenesis of inflammatory skin disease

To the Editor:

Czarnowicki et al¹ have reported that severe atopic dermatitis is characterized by expansion of circulating T_H2 and T_H22, but not T_H17, within the skin-homing population. The T_H22 subset has been discovered in leprosy, with increased IL-22 in T_H2 anergic lepromatous leprosy and decreased IL-22 in T_H1 tuberculoid leprosy with intact cell-mediated immunity.² The increase in IL-22 at the T_H2 lepromatous pole corresponds to the increase in IL-22 in T_H2 atopic dermatitis versus T_H1 psoriasis.¹ T_H22 is well established in both T_H1 psoriasis and T_H2 atopic dermatitis.³ Leprosy is the first disease classified by the T cell, with T_H1 paucibacillary tuberculoid disease with intact cell-mediated immunity and T_H2 multibacillary lepromatous disease anergic to *Mycobacterium leprae* epitopes.⁴ T_H22 cells like T_H17 cells are less stable phenotypes compared with the polar T_H1 and T_H2 subsets. We speak of T-cell “subsets” as if they are stable, but the truth is that they are all in a spectrum of T-cell plasticity; for example, T_H17 can become T_H1, T_H2, T_H9, T_H22, or even regulatory T cells.⁵ The same is likely true for the unstable T_H22 subset as it has been discovered in both T_H1 psoriasis and T_H2 atopic dermatitis.³ Inflammatory skin disease has been traditionally classified on the basis of clinical morphology, with psoriasis being extensor with silvery scale and distinct plaques and atopic dermatitis with flexural erythema and scaling without distinct plaques.⁶ With improved knowledge of the immune system, Guttman-Yassky et al³ have proposed a more sophisticated molecular classification based on immune function. This approach is also being worked on in leprosy, which has been traditionally classified according to the T-cell spectrum.⁴

Further studies of leprosy using the sophisticated technology by the Guttman-Yassky group will shed further light on inflammatory skin disease as well as autoimmunity and cancer immunotherapy.⁷

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