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Psoriasis, an autoimmune disease promoted by defective innate immunity

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It is now generally accepted that psoriasis is a T-lymphocyte mediated inflammatory disease. Early data supporting this concept, published about 25 years ago, were initially subjected to vigorous and healthy scepticism and discussed as current controversy as late as 2000. However, this paradigm is now generally accepted and management with agents that selectively block certain T-lymphocyte sub-populations is now the treatment of choice for patients with moderate to severe psoriasis. The nature of the antigens involved, remains to be fully established but some recent findings have strongly implicated streptococcal components. Genetic analyses have identified a number of susceptibility alleles that may predispose to psoriasis, including the HLA-Cw6 allele that is carried by about 60% of the patients, compared with only about 15% of population controls. Many other susceptibility alleles with lower penetrance have been identified and some may be associated with defects in innate immunity. Although the innate immune system does not directly involve antigen specific immune mechanisms, it closely interacts in a variety of ways with adaptive immunity. Thus, it is well established that defective innate immunity predisposes to antigen specific autoimmune diseases. HLA-Cw6 positive psoriasis patients respond abnormally to short keratin peptides that share sequences with streptococcal M protein and vice versa. Furthermore, improvement of psoriasis after tonsillectomy correlates closely with decrease in the frequency of circulating CD8 T lymphocytes that recognize such peptides. It is therefore proposed that HLA-Cw6 positive psoriasis patients have molecular mimicry based autoimmunity. Whether other mechanisms operate in HLA-Cw6 negative psoriasis patients remains to be elucidated.

Biography

Helgi Valdimarsson is a Professor of Immunology at the University of Iceland. He established the first Immunology Laboratory of Iceland in 1983. He was a Senior Lecturer at St Mary's Hospital Medical School, London, England from 1975-1981 and a Visiting Professor at St. Mary's from 1981-1990. He has published over 180 articles in international peer reviewed journals and for his work on psoriasis he has received several research grants including European Commission Grant (1998-2002) and a Fogarty Scholarship in 2003.

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