Genetic Studies on Psoriasis with Emphasis on the HLA Region

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In collaboration with the Swedish Psoriasis Association, a large patient sample has been collected with blood samples for DNA analysis. The main purpose of the group has been to demonstrate the genetic contribution to the disease and to localise susceptibility genes.

Psoriasis is a heterogeneous disease in which several reports suggest the presence of a susceptibility gene in or in the proximity of the HLA complex in chromosome 6p. There is an association between HLA-Cw6 and young onset of the disease. The aim of this study was to evaluate the importance of HLA and in particular the Cw6 allele in the development of psoriasis.

We studied the age at onset of siblings discordant for the presence of Cw6 using the Wilcoxon signed rank test. This test was significant with a mean difference in age at onset of 8 years. The Cw6 allele was sequenced in individuals homozygous for Cw6 without finding any alterations from the consensus reference sequence. In all, 11 individuals homozygous for Cw6 were identified by a sequencing method. They had an earlier age at onset than heterozygotes, which we interpret as a tendency to a gene dose effect. We found support for the direct influence of Cw6 on age at onset, rather than a polygenic effect where every genetic component adds to the genetic load.

We have also performed cytogenetic analysis of 477 unrelated psoriatics. We found 2 patients with a translocational breakpoint in 11q12-13, in a region where the major atopy locus as well as a locus for diabetes mellitus is located. The breakpoints were further characterised by fluorescent in situ hybridisation.

Key words: psoriasis, age at onset, HLA, HLA-Cw6, linkage analysis, transmission disequilibrium test, corneodesmosin, cytogenetics.
List of original publications


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Pityrosporum ovale (Malassezia furfur) and Atopic Dermatitis
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ABSTRACT

Allergy to a saprophytic yeast of the human skin, Pityrosporum ovale (P. ovale), an oval form of Malassezia furfur, has been suspected to play a role in atopic dermatitis (AD), especially in patients with head, neck and shoulder dermatitis. The aim of this study was to investigate the importance of P. ovale as a source of allergens in adult patients with AD.