

Ethnic Differences in Genetic Susceptibility to Atopy and Asthma in Singapore

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Abstract

Introduction: Asthma and atopy are complex traits, the phenotypes being influenced by the interaction of both genetic and environmental factors. In view of the growing evidence for inter-ethnic differences in genetic susceptibility to complex diseases such as asthma and atopy, we have assessed genetic factors for these diseases in the local population. **Methods:** The genetic analysis of asthma and atopy is being approached by candidate gene analysis as well as linkage studies for mapping of susceptibility loci. We reviewed published studies, which include data from our population on some candidate genes, as well as our preliminary data on susceptibility locus mapping for linkage to chromosome 5q31-33. **Results:** In local studies of the interleukin-4 receptor and tumour necrosis factor polymorphisms, we failed to find associations with genetic variants previously implicated to be associated with asthma and atopy. Evaluation of markers on chromosome 5q31-32 identified novel loci for susceptibility to asthma and atopy in addition to loci already described by others. **Conclusion:** Both the published literature and our own findings indicate that there are inter-ethnic differences in genetic susceptibility to asthma and atopy.

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