Host genetic factors in malaria

Human populations in malaria-endemic regions exhibit a variety of genetic polymorphisms which are absent or rare in malaria-free areas. The correlation between these genetic dispositions and the endemicity of malaria suggests a protective effect of the former against the latter, and consequently, positive selection during evolution.

Susceptibility and host resistance

It is estimated that each 25%-30% in the variability in the incidence of malaria can be attributed to genetic and environmental factors, respectively. In various study designs on the different types of manifestation of Plasmodium falciparum infection, associations between genetic polymorphisms and malaria are examined. The selection of polymorphisms under study follows hypotheses on the role of e.g. immune receptors in the pathophysiology of malaria. Beyond epidemiological aspects of influencing the risks of infection, disease, and fatality, functional analyses are increasingly focused on. These examinations aim at an improved understanding of the epidemiological and functional relationships between protective or disposing factors and disease to ultimately generate starting-points for therapeutical or preventive measures.

Project Details

Papers

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