

A SERO – EPIDEMIOLOGICAL STUDY IN A PREVIOUSLY HIGHLY MALARIA ENDEMIC AREA IN SRI LANKA

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Introduction

Kataragama lies in the dry lowland coastal plains of southeast Sri Lanka. Though this is considered as a malaria endemic area the number of malaria cases has decreased dramatically over the past 5 years.

Objective

This study is to investigate the immune status of residents from selected areas by measuring antibody levels against known malaria antigens.

Methods

Blood was collected from 1,011 individuals (50.8% males) and serum was separated. Antibody titres against six antigens, Pf_ AMA1, Pf_ MSP1, Pf_ MSP2, Pf_ NANP, Pv_ AMA1, Pv_ MSP1 and total IgE level were determined by the ELISA test. Antibody levels were analyzed in relation to gender, age group, history and number of malaria attacks.

Results

The IgE levels were highly significant in males ($p < 0.000$) but there was no significant difference between males and females regard to other antibody groups. There were significant increase in antibody levels Pf_ MSP1 ($p = 0.001$) and Pv_ AMA1 ($p < 10^{-3}$) in individuals between ages 45 – 59 years.

Over the last 10 years 188/1011 had suffered one or more malaria attacks (Group A), 530 individuals suffered no attacks (Group B) and 293 could not remember (Group c). There was a significant increase in antibody levels of Pf_ AMA1 ($p = 0.004$), Pf_ MSP2 ($p = 0.027$), Pf_ NANP ($p = 0.002$) and Pv_ MSP1 ($p = 0.003$) in Group A when compared with Groups B and C. There was no significant difference of antibodies according to the number of malaria attacks.

Conclusions

In this low malaria transmission area there appears to be age – acquired immunity up to 59 years which is likely to be due to repeated exposure to malaria