

eosinophil helminthotoxicity in patients treated for *Schistosoma mansoni* infections

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Abstract:

The changes in eosinophil levels and in eosinophil-mediated antibody-dependent schistosomular cytotoxicity, following treatment for *Schistosoma mansoni* infections, have been investigated in 2 similar groups of patients aged 15-50 years. Patients in group 1 were treated with either hycanthon or oxamniquine, and those in group 2 with hycanthon or praziquantel. Eosinophil levels were significantly increased in both groups. In group 1 peripheral blood eosinophil counts rose from a mean of 175/microliters before treatment to 745/microliters 3 weeks after treatment, and in group 2 from 181/microliters to 1066/microliters. The increase in eosinophil levels was positively correlated with a rise in circulating anti-adult worm antibodies ($r = -0.587$, P less than 0.05), whereas a negative correlation was recorded with anti-egg antibodies ($r = -0.727$). Despite some enhanced eosinophil helminthotoxicity following treatment in some of the individuals in group 1 (7/15), the change overall was not significant. In group 2, in which a different standard anti-schistosomular antibody was used, the eosinophil killing capacity recorded at 3 weeks was lower than that before commencement of treatment ($t = 2.89$, P less than 0.01). The eosinophil stimulating activity, detected in cultured mononuclear cell supernatants (MCS) from individual patients, correlated with eosinophil levels ($r = 0.582$, P less than 0.02) but there was no association with eosinophil killing. MCS activity did not appear to be boosted by treatment. These studies showed that peripheral blood eosinophil counts were increased following treatment, but their ability to kill schistosome larvae is variable and may depend on the immune serum used as the source of anti-schistosomular antibody