FLOW CYTOMETRIC STUDY OF T-CELL SUBSETS AND COSTIMULATORY MOLECULES IN CLINICAL FORMS OF HUMAN SCHISTOSOMA MANSONI CHRONIC INFECTION

Manar S. Azab MD, Khaled N. El-Fayoumy MD*, Mustafa N. Neamatallah MD** and Tawfik EL- Adl MD***

Departments of Parasitology, Internal Medicine*, Medical Biochemistry **, Faculty of Medicine, Mansoura University, Department of Internal Medicine***, Faculty of Medicine- Benha University, Egypt

Abstract

Helminthic parasites cause widespread, persistent infections in humans. Schistosomiasis mansoni infected patients being in a chronic immune-activation state enabled us to investigate the effects of such immune activation on immune responses. We performed by flow cytometry a phenotypic analysis of peripheral blood T lymphocytes from 64 Schistosoma mansoni infected patients, in different clinical forms of the chronic disease. The main findings in the patient group in comparison with the non-infected controls were: (i) decreased CD3, CD4 and CD8 lymphocyte counts; (ii) elevated levels of activated T cells (CD4 expressing HLA-DR); (iii) decreased numbers of CD28+ CD8+ lymphocytes. These findings support the notion that chronic helminthic infections cause persistent immune activation that result in hyporesponsiveness and anergy. Such impaired immune functions may diminish the capacity of these individuals to cope with infections and to generate cellular protective immunity after vaccination.

KEY WORDS: schistosomiasis; clinical forms; T-cell subsets.