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Analysis of cellular immune response in cutaneous leishmaniasis Syrian patients

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Abstract: Leishmaniasis comprises a spectrum of diseases caused by an obligate intracellular parasite *Leishmania*. There is a wide range of clinical presentations which are dependent on the different species of the parasite as well as immune response offered by the host. This study was done to analyze quantitatively the cellular immune host response by demonstrating various T cell subsets in new and old cutaneous leishmaniasis (CL) patients using flow cytometric immunophenotype, and some cytokines levels were evaluated by enzyme-linked immunoabsorbent assay in patients with new or old CL. Blood samples were collected from CL patients visiting the Dermatology Hospital in Damascus, after confirming of their infection microscopically. Patient's samples were divided into two groups according to legion's age, the first group containing new infections (1-3 months, 28 patient), and the second one including old infections (6-9 months, 30 patient). In result, immunophenotyping showed increasing in CD4 and CD8 T-cells proportion through infection progression. As well, an obvious increasing in CD4CD25 regulatory T-cells proportion was observed in old patients in comparison with early stages of infection and non-infected persons. In addition, higher interleukin (IL)-4 level was observed in patients with new lesions, whereas old and cured subjects produced IFN-gamma and IL-12 at elevated levels. In conclusion, we tried in this study to determine the immune parameters provide protective immunity and responsible for cure.

Keywords: Cutaneous leishmaniasis, cellular immune host response, immunophenotyping, Cytokines.

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