



T lymphocytes from malnourished infants are short-lived and dysfunctional cells

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Abstract:

To investigate T-cell functional molecules and inflammatory cytokines and to assess T-cell apoptosis in malnourished infants, 64 infants from undernourished women and 28 healthy control infants were recruited to the study. Malnourished infants showed a significant decrease in the levels of circulating IL-2 and IL-7 and increases in the levels of IL-1 β , IL-6, IL-10 and TNF- α , as measured by flow cytometry. There was a significant reduction in the number of CD3+ T cells and an increase in apoptotic T cells, which was associated with an up-regulation of CD95 and PD-1 expression on CD3+ T cells in malnourished compared to control infants. Significant reductions were also observed in the phosphorylation of AKT and STAT5 and in the expression of CCR7 and CXCR4 receptors in malnourished children, and these reductions were associated with a significant reduction in T-cell migratory capacity to their ligands CCL21 and CXCL12, respectively, as measured using an in vitro chemotaxis assay. Taken together, these data suggest that lymphocytes from malnourished infants are short-lived and dysfunctional.

Keywords:

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