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CD3, CD4 and CD8 in Children with Chronic Diarrhea

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Abstract

Background: Severe defects in T cell number and/or function result in increased susceptibility to severe infections including chronic diarrhea.

Objective: This pilot study aimed at investigating underlying T cell immunodeficiency in Egyptian children with chronic diarrhea through assessment of CD3, CD4 and CD8.

Methods: Thirty children with chronic diarrhea were investigated in comparison to 20 healthy controls. For all subjects, complete blood counts and flow-cytometric analysis of CD3, CD4 and CD8 were done.

Results: Among patients' group, we found five patients with decreased CD3, CD4 and CD8 percentages and counts and CD4/CD8 ratio. In comparison to controls, patients with chronic diarrhea had significantly higher mean white blood cells counts (mean ± SD = 13.4 ± 2.5 10^9/L), lower lymphocytic count (mean ± SD = 3.8 ± 1.7 10^9/L), lower CD4 and CD8 percentages, lower CD3 counts (mean ± SD = 2.5 ± 1.2 10^9/L), lower CD4 counts (mean ± SD = 1.4 ± 0.7 10^9/L) and CD8 counts (mean ± SD = 1 ± 0.5 10^9/L) and lower CD4/CD8 ratio. Patients with chronic diarrhea with normal CD markers were comparable to controls in relation to all studied laboratory parameters. T cell counts and CD4/CD8 ratio correlated negatively with duration of diarrhea and number of previous repeated infections per year and positively with weight percentiles.

Conclusion: Investigating T cell subpopulations is an essential step in the evaluation of patients with chronic diarrhea as this may help reveal an underlying immunodeficiency.