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Effects of cyanocobalamin on immunity in patients with pernicious anemia.

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OBJECTIVE: The aim of the study was to **evaluate the role of vitamin B(12) in patients with pernicious anemia**.
MATERIALS AND METHODS: This study was conducted prospectively at the Turgut Ozal Medical Center, Department of Hematology, between April and November 2002. Absolute numbers and ratio of the surface antigens of T and B lymphocyte subgroups, CD4/CD8 ratio were calculated in order to evaluate changes in leukocyte and lymphocyte numbers; natural killer (NK) cell count, serum C3, C4, and levels of immunoglobulins G, A, and M were also measured to evaluate vitamin B(12) effect on immunity. Values obtained before treatment with cyanocobalamin were compared with those found during peak reticulocyte count.
RESULTS: In vitamin B(12)-deficient patients, absolute numbers of CD4+ and especially CD8+ lymphocytes were found to be decreased; CD4/CD8 ratio increased, and NK cell activity was depressed. **After cyanocobalamin treatment: (1) absolute numbers and percentage of lymphocyte subgroups were elevated. (2)Increased CD4/CD8 ratio and depressed NK cell activity were restored. (3)levels of C3, C4, and immunoglobulins were elevated. CONCLUSION:** These findings suggest that **vitamin B(12) has important *immunomodulatory effects on cellular immunity*, and abnormalities in the immune system in pernicious anemia are restored by vitamin B(12) replacement therapy.**

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