

Abstract

Eur J Clin Nutr. 2010 Jun 23. [Epub ahead of print]

Vitamin B(6) supplementation improves pro-inflammatory responses in patients with rheumatoid arthritis.

Huang SC, Wei JC, Wu DJ, Huang YC.

School of Nutrition, Chung Shan Medical University, Taichung, Taiwan.

BACKGROUND/OBJECTIVES: The purpose of this study was to investigate whether vitamin B(6) supplementation had a beneficial effect on inflammatory and immune responses in patients with rheumatoid arthritis (RA).

SUBJECTS/ METHODS: This was a single-blind co-intervention study performed at the Division of Allergy, Immunology and Rheumatology of Chung Shan Medical University Hospital, Taiwan. Patients were diagnosed with RA according to the 1991 American College of Rheumatology criteria for RA. Patients were randomly allocated into two groups: control (5 mg/day folic acid only; n=15) or vitamin B(6) (5 mg/day folic acid plus 100 mg/day vitamin B(6); n=20) for 12 weeks. Plasma pyridoxal 5'-phosphate (PLP), serum folate, inflammatory parameters (that is, high-sensitivity C-reactive protein (hs-CRP), erythrocyte sedimentation rate (ESR), interleukin-6 (IL-6), tumor necrosis factor-alpha (TNF-alpha)) and immune parameters (that is, white blood cell, total lymphocyte, T-cell (CD3), B-cell (CD19), T-helper cell (CD4), T-suppressor (CD8)) were measured on day 1 (week 0) and after 12 weeks (week 12) of the intervention.

RESULTS: In the group receiving vitamin B(6), plasma IL-6 and TNF-alpha levels significantly decreased at week 12. There were no significant changes with respect to immune responses in both groups except for the percentage of total lymphocytes in the vitamin B(6) group when compared with week 0 and week 12. Plasma IL-6 level remained significantly inversely related to plasma PLP after adjusting for confounders (beta=-0.01, P=0.01).

CONCLUSIONS: A large dose of vitamin B(6) supplementation (100 mg/day) suppressed pro-inflammatory cytokines (that is, IL-6 and TNF-alpha) in patients with RA.

PMID: 20571496