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Functional Vitamin B12 Deficiency Represented by Elevated Urine Methylmalonic Acid Levels  
in Patients with Migraine

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**Abstract:** Aims: Although vitamin B12 is currently used as a treatment option in patients with migraine, a possible cobalamin deficiency in those patients has not yet been investigated. In this study, we aimed to investigate cobalamin metabolism in patients with migraine. Materials and Methods: Fifty women having migraine without aura were matched with healthy controls (n=6) with the same age distribution. Fasting serum vitamin B12, folate, plasma total homocysteine (tHcy) and first morning urine methylmalonic acid (MMA) levels were determined in patient and control groups. Statistical differences in laboratory parameters between patient and control groups were analyzed by SPSS for Windows software. Results: Vitamin B12 and folate levels in the patient group were not different from those of the control group. Although mean plasma tHcy and urine MMA levels in the patient group were significantly higher than those in the control group, only a small portion (12%) of patients had plasma tHcy levels higher than the reference range, whereas 70% of patients had increased urine MMA levels. Conclusions: There was a functional vitamin B12 deficiency represented by elevated urine MMA levels in patients having migraine without aura. We suggest that vitamin B12 treatment for migraine patients should be started thereafter screening for MMA elevations.

**Key Words:** Migraine, vitamin B12 deficiency, methylmalonic acid, homocysteine

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