

Effective Treatment of Cobalamin Deficiency With Oral Cobalamin

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Because cobalamin deficiency is routinely treated with parenteral cobalamin, we investigated the efficacy of oral therapy. We randomly assigned 38 newly diagnosed cobalamin deficient patients to receive cyanocobalamin as either 1 mg intramuscularly on days 1, 3, 7, 10, 14, 21, 30, 60, and 90 or 2 mg orally on a daily basis for 120 days. Therapeutic effectiveness was evaluated by measuring hematologic and neurologic improvement and changes in serum levels of cobalamin (normal, 200 to 900 pg/mL) methylmalonic acid (normal, 73 to 271 nmol/L), and homocysteine (normal, 5.1 to 13.9 μ mol/L). Five patients were subsequently found to have folate deficiency, which left 18 evaluable patients in the oral group and 15 in the parenteral group. Correction of hematologic and neurologic abnormalities was prompt and indistinguishable between the 2 groups. The mean pretreatment

values for serum cobalamin, methylmalonic acid, and homocysteine were, respectively, 93 pg/mL, 3,850 nmol/L, and 37.2 μ mol/L in the oral group and 95 pg/mL, 3,630 nmol/L, and 40.0 μ mol/L in the parenteral therapy group. After 4 months of therapy, the respective mean values were 1,005 pg/mL, 169 nmol/L, and 10.6 μ mol/L in the oral group and 325 pg/mL, 265 nmol/L, and 12.2 μ mol/L in the parenteral group. The higher serum cobalamin and lower serum methylmalonic acid levels at 4 months posttreatment in the oral group versus the parenteral group were significant, with $P < .0005$ and $P < .05$, respectively. In cobalamin deficiency, 2 mg of cyanocobalamin administered orally on a daily basis was as effective as 1 mg administered intramuscularly on a monthly basis and may be superior.

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