

Clinical Update

Metformin and Vitamin B₁₂ Deficiency

Evidence suggests that metformin lowers vitamin B₁₂ levels in patients with diabetes.

(Diabetes Care, January 2010)

Observational studies have suggested that metformin causes vitamin B₁₂ deficiency in some patients; researchers have proposed several possible mechanisms whereby metformin might interfere with B₁₂ absorption. Understanding this interaction is important, because B₁₂ deficiency could exacerbate neuropathic symptoms in patients with diabetes.

In this prospective case-control study, Canadian investigators identified 122 type 2 diabetic patients with peripheral neuropathy: Half had taken metformin for at least 6 months, and half had never received metformin. Otherwise, clinical characteristics of the groups were similar.

Median serum B₁₂ level was significantly lower in the metformin group than in the no-metformin group (231 vs. 486 pmol/L). Metformin recipients also had significantly higher levels of homocysteine and methylmalonic acid (markers of B₁₂ deficiency) and significantly worse scores on standardized clinical assessments of severity of neuropathy. In multivariate analyses controlled for age, duration of diabetes, and glycosylated hemoglobin (HbA_{1c}) level, metformin therapy was associated independently with worse neuropathic symptoms.

This study strengthens the case for an effect of metformin therapy on vitamin B₁₂ levels. The analysis also suggests that this interaction worsens neuropathy, but confounding by unknown factors could be responsible for this observation. In one randomized placebo-controlled trial, metformin lowered B₁₂ levels. ([J Intern Med 2003; 254:455](#))

Source: www.journalwatch.com

