Metformin for type 2 diabetes

JANUARY 2019

TO THE EDITOR: I enjoyed reading “Should metformin be used in every patient with type 2 diabetes” by Makin and Lansang in the January 2019 issue.1

I just wanted to point out that metformin is a frequent cause of low serum vitamin B₁₂ levels, and serum vitamin B₁₂ levels should be monitored intermittently in patients using metformin.

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REFERENCE

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IN REPLY: We thank Dr. Moskowitz for his kind comments. We agree about the need for assessing vitamin B₁₂ levels during chronic metformin use.

Secondary analysis of patients in the Diabetes Prevention Program Outcomes Study showed a higher incidence of combined low and low-normal vitamin B₁₂ deficiency in users assigned to the metformin group compared with those assigned to the placebo group at the 5-year and 13-year marks after randomization.1 Post hoc analysis of patients in the Hyperinsulinemia: the Outcome of Its Metabolic Effects trial also showed lower levels of vitamin B₁₂ and higher levels of methylmalonic acid associated with significant worsening of a validated neuropathy score in metformin users.²

The mechanism behind the development of vitamin B₁₂ deficiency is not completely understood but could possibly be alterations in intestinal mobility, bacterial overgrowth, or calcium-dependent uptake by ileal cells of the vitamin B₁₂-intrinsic factor complex.³

Our electronic medical record has a built-in tool that suggests checking vitamin B₁₂ whenever a patient requests metformin refills. There are no current guidelines on the need for baseline testing of the vitamin B₁₂ level. The American Diabetes Association recommends periodic measurement of vitamin B₁₂ levels, possibly yearly, in metformin users and more often if there are symptoms indicative of deficiency.⁴

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