

Abstract

J Am Board Fam Med. 2009 Sep-Oct;22(5):528-34.

The prevalence of vitamin B(12) deficiency in patients with type 2 diabetes: a cross-sectional study.

Pflipsen MC, Oh RC, Saguil A, Seehusen DA, Topolski R.

Department of Primary Care, Raymond W Bliss Army Health Center, Ft. Huachuca, AZ 85613, USA.

PURPOSE: The purpose of this study is to define the prevalence of vitamin B(12) deficiency in a type 2 diabetic population within a primary care practice. Metformin use and advanced age are associated with vitamin B(12) deficiency and often present in type 2 diabetic patients, yet the prevalence of vitamin B(12) deficiency in the diabetic population is unknown.

METHODS: We conducted a cross-sectional study of 203 outpatient type 2 diabetic patients at a large military primary care clinic. Patients completed a survey and had B(12) levels measured. Patients with borderline B(12) levels also had methylmalonic acid and homocysteine levels drawn. Serum B(12) levels <100 pg/mL or serum B(12) levels of 100 to 350 pg/mL with elevation of serum methylmalonic acid >243 nmol/L or homocysteine >11.9 nmol/L defined B(12) deficiency. Descriptive statistics described frequency and means. chi(2) and student's t tests were used to analyze associations between categorical and continuous variables, respectively. Multivariate logistical regression identified covariates independently associated with B(12) deficiency.

RESULTS: Twenty-two percent (n = 44) of diabetic patients had metabolically confirmed B(12) deficiency. Patients on metformin had lower serum B(12) levels (425.99 pg/mL vs 527.49 pg/mL; P = .012) and were at increased risk for B(12) deficiency (P = .04), as defined by a serum B(12) level <350 pg/mL. Prevalence of B(12) deficiency was significantly lower for patients using a multivitamin (odds ratio, 0.31; 95% CI, 0.15-0.63).

CONCLUSIONS: Our results found a 22% prevalence of metabolically confirmed B(12) deficiency in the primary care type 2 diabetic population. Although further research needs to be performed to determine the clinical implications of our findings, B(12) deficiency should be considered in type 2 diabetic patients, especially those taking metformin. Furthermore, a daily multivitamin may protect against B(12) deficiency.

PMID: 19734399

FREE FULL TEXT

