Oral vitamin B12 versus intramuscular vitamin B12 for vitamin B12 deficiency.

Author information: Vidal-Alaball J1, Butler CC, Cannings-John R, Goringe A, Hood K, McCaddon A, McDowell I, Papaioannou A.

Abstract

BACKGROUND: Vitamin B12 deficiency is common and rises with age. Most people with vitamin B12 deficiency are treated in primary care with intramuscular vitamin B12 which is a considerable source of work for health care professionals. Several case control and case series studies have reported equal efficacy of oral administration of vitamin B12 but it is rarely prescribed in this form, other than in Sweden and Canada. Doctors may not be prescribing oral formulations because they are unaware of this option or have concerns regarding effectiveness.

OBJECTIVES: To assess the effectiveness of oral vitamin B12 versus intramuscular vitamin B12 for vitamin B12 deficiency.

SEARCH STRATEGY: Searches were undertaken of The Cochrane Library, MEDLINE, EMBASE and Lilacs in early 2005. The bibliographies of all relevant papers identified using this strategy were searched. In addition we contacted authors of relevant identified studies and Vitamin B12 research and pharmaceutical companies to enquire about other published or unpublished studies and ongoing trials.

SELECTION CRITERIA: Randomised controlled trials (RCTs) examining the use of oral or intramuscular vitamin B12 to treat vitamin B12 deficiency.

DATA COLLECTION AND ANALYSIS: All abstracts or titles identified by the electronic searches were independently scrutinised by two reviewers. When a difference between reviewers arose, we obtained and reviewed a hard copy of the papers and made decisions by consensus. We obtained a copy of all pre-selected papers and two researchers independently extracted the data from these studies using piloted data extraction forms. The whole group checked whether inclusion and exclusion criteria were met, and disagreement was decided by consensus. The methodological quality of the included studies was independently assessed by two researchers and disagreements were brought back to the whole group and resolved by consensus.

MAIN RESULTS: Two RCT’s comparing oral with intramuscular administration of vitamin B12 met our inclusion criteria. The trials recruited a total of 108 participants and followed up 93 of these from 90 days to four months. High oral doses of B12 (1000 mcg and 2000 mcg) were as effective as intramuscular administration in achieving haematological and neurological responses.

AUTHORS’ CONCLUSIONS: The evidence derived from these limited studies suggests that 2000 mcg doses of oral vitamin B12 daily and 1000 mcg doses initially daily and thereafter weekly and then monthly may be as effective as intramuscular administration in obtaining short term haematological and neurological responses in vitamin B12 deficient patients.

Review: Limited evidence from 2 randomised controlled trials suggests that oral and intramuscular vitamin B12 have similar effectiveness for vitamin B12 deficiency. [Evid Based Med. 2006]

PMID: 16034940 DOI: 10.1002/14651858.CD004655.pub2 | [PubMed - indexed for MEDLINE]