Closing the therapeutic gap in patients with low vitamin B12 levels

Low vitamin B12 levels are not always acted upon promptly.[1] Qureshi *et al* reported that vitamin B12 replacement appeared to have been initiated in only four out of 23 patients with vitamin B12 deficiency.[1] Early recognition and treatment of vitamin B12 deficiency is essential to prevent irreversible damage.[2] In this study, I determined the extent of, and corrected, unmet need for treatment in patients with low vitamin B12 levels under the care of the hospital.

The integrated medicine and care of the elderly service with four consultant physicians discharged approximately 2800 patients annually, from November 2005 to October 2010. I reviewed a printout of all low vitamin B12 results obtained during this period, detailing the dates that the specimens were taken, the inpatient or outpatient status, and hospital unit numbers. I then obtained relevant medical records for perusal.

The assay used throughout was the Elecsys Vitamin B12 (Roche platform). The normal range for the laboratory was 191–663 ng/l. Out of 312 results, 31 patients had vitamin B12 levels that were <120 ng/l; that is, >25% below the lower limit of normal, and so likely to be indicative of deficiency[3] (first chart trawl). A comparison group of 38 patients whose vitamin B12 levels were between 120 ng/l and 190 ng/l, was also studied (second chart trawl).

Trainee doctors (to whom I am very grateful) reviewed the charts to establish whether appropriate action had been taken to treat patients with low vitamin B12 levels, by reading correspondence and also by telephoning general practitioners' receptionists, to establish whether the patient was currently receiving vitamin B12 therapy. With secretarial support, the supervising consultant (LW), checked all of the data relating to patients not receiving vitamin B12 therapy.

When patients were found to have unaddressed vitamin B12 deficiency, both the patient and their general practitioner were informed by letter, asking that consideration be given to starting vitamin B12 therapy. In addition, a preliminary repeat vitamin B12 level was advised.

Medical colleagues were also alerted regarding patients with intermittently low, or low-normal levels, as these can also be clinically significant.[4] For the 69 patients with low vitamin B12 levels, 56 medical charts were available. From these, six patients (three from each chart trawl) were identified who appeared to require vitamin B12 therapy, but were not receiving it.

In a further three patients, concordance issues accounted for a failure to continue on therapy. Therefore, vitamin B12 administration was not occurring as might have been anticipated, for whatever reason, in nine out of 56 patients. A macrocytic anaemia was found to be present in four out of the nine patients described.

Problems with the management of vitamin B12 deficiency are well documented.[1–4] Within the Trust (serving a population of approximately 460,000) there has been a marked increase in the number of vitamin B12 level requests, from both primary and secondary care (11–20% year-on-year during the study period). Although some uncertainty surrounds the management of subclinical vitamin B12 deficiency (ie patients in whom there is no evidence of macrocytosis or neuropsychological symptoms or signs), all patients with a low vitamin B12 level should have a diagnostic evaluation.[4] The absence of severe symptoms or a macrocytosis does not mean that a patient does not require vitamin B12 replacement therapy. For example, in a study by Loikas *et al*, only two out of 97 subjects would have been diagnosed had subjects with merely macrocytic anaemia been suspected to have vitamin B12 deficiency.[2]

Doctors differ in their approach to the management of abnormal vitamin B12 levels. The absence of national guidelines to assist decision making, does not help. Problematically, current systems in health care do not reliably ensure that test results are received and acted upon by requesting physicians.[5] Guidelines on the measurement of vitamin B12 levels issued a few years earlier, were redistributed to all clinicians in the Trust.

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References

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