

Prescribing guideline for vitamin B12 deficiency of unclear cause.

Normal B12 level (180-914 ng/L)
No action required

Diagnostic tests

- FBC to determine MCV, haematocrit and Hb levels
- B12 and folate levels
- Anti-Intrinsic Factor antibodies (highly specific for Pernicious Anaemia (PA) (95-100%), but not very sensitive (only positive in 50-60% of patients with PA))

Note

- Levels do not correlate well with clinical symptoms-the clinical picture is most important in assessing the significance of levels.

Borderline deficiency (150-179ng/L)

No neurological symptoms or macrocytic anaemia

Dietary advice and recheck in 1-2 months

Repeat test still borderline

Consider 12 week trial of OTC cyanocobalamin 50 micrograms daily.

Patients must be told to report any neurological symptoms should they develop

Recheck levels after 12 weeks

Repeat test still borderline

Consider likelihood of pernicious anaemia and treat with IM hydroxocobalamin accordingly

Repeat test normal

Consider long term OTC cyanocobalamin as clinically indicated. Vegans likely to need lifelong supplementation

Deficient (< 150ng/L)

With neurological symptoms and/or macrocytic anaemia

IM hydroxocobalamin

IM hydroxocobalamin -dose dependent on whether patient has neurological symptoms

Causes of Vitamin B12 deficiency

- Pernicious Anaemia (PA)
- Diet- vegan (11% prevalence in this group), malnourished
- Drugs- long term PPI's or H2-antagonists, Metformin, Colchicine
- Gastrectomy, small bowel surgery, Crohn's disease, Coeliac disease
- Chronic alcoholism, pancreatic failure
- Oral contraceptive pill-not a true deficiency state (thought to be decreased carrier protein)

Dietary advice –Eggs, meat, milk and dairy, salmon and cod. Fortified products include some breakfast cereals and breads

OTC Vitamin B12 tablets are available from pharmacies, supermarkets, on-line retailers and health food shops.

Possible Neurological symptoms

- Peripheral neuropathy
- Cognitive changes –e.g.dementia
- Optic neuropathy
- Muscle weakness
- Urinary or faecal incontinence

Other signs and symptoms

- Lethargy
- Glossitis
- Palpitations, tachycardia
- Angina
- Megaloblastic anaemia
- Depression

Treatment Options

IM hydroxocobalamin-For patients with neurological involvement

Ideally management should be guided by a specialist, but if not readily available **1mg on alternate days until no further improvement then 1mg IM every 2 months**

IM hydroxocobalamin for patients without neurological involvement

1mg three times a week for 2 weeks then 1mg every three months for life

Oral cyanocobalamin (vitamin B12)

Available OTC –recommended dose 50-150 micrograms daily according to response.

IM hydroxocobalamin 1mg every 6months may be an alternative for vegans or elderly with malabsorption.

Patients should be told to report any neurological symptoms urgently (beware of the possibility of latent or emerging pernicious anaemia)