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Patients with unexplained neurological symptoms and signs should be screened for vitamin B12 deficiency regardless of haemoglobin levels

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Introduction: Vitamin B12 (hydroxycobalamin) is vital for the proper functioning of the nervous system and for haemopoiesis. There is a high prevalence of B12 deficiency in the general population, particularly in vegetarians, and the elderly (1). B12 deficiency can have a variety of presentations, including visual field defects, ophthalmoplegia and optic atrophy (2). NICE guidance currently states that pernicious anaemia is the most common cause of severe vitamin B12 deficiency and screening for deficiency should not take place unless macrocytic anaemia is present (3). We aimed to investigate patients with neurological signs secondary to severe B12 deficiency and assess if there was any correlation between severe Vitamin B12 deficiency and macrocytic anaemia.

Methods: This study retrospectively reviewed the medical records of all patients who presented with neurological signs to a single eye clinic (GWH, Swindon) and were found to be severely deficient in Vitamin B12 (<100 ng/L).

Results: Fifteen patients presented with severe vitamin B12 deficiency between January 2018 and January 2021. Age at presentation was 49.6 ± 24.9 years (range 18 - 98) and 53.3% of patients were female. Patients presented with visual field defects (33.3%), blurred or swollen optic discs. (26.7%), diplopia (13.3%) and ophthalmoplegia (13.3%). There was no significant difference in visual acuity between the affected and unaffected eyes (0 logMAR). B12 level was severely deficient at 84.1 ± 16.6 ng/L, while haemoglobin (Hb) was normal at 135.8 ± 34.3 g/L and mean corpuscular volume (MCV) was normal at 93.2 ± 4.9 fL. MCV was increased slightly in only one patient (6.67%) and none of the patients had a Hb less than 120 g/L. None of the patients tested positive for intrinsic factor or GPC antibodies.

Discussion: Current NICE guidance appears to be obsolete and should be used with caution. Vitamin B12 deficiency manifests as a wide range of neurological deficits and symptoms before any effect is seen on haematological markers. Patients with unexplained visual field defects should be screened for B12 deficiency.

Biography

Jyotin Pandit is a Consultant Ophthalmic Surgeon based at Great Western Hospital NHS Foundation Trust in Swindon, Wiltshire. His special interests are Ocular Surface Inflammation, Dry Eye Syndrome and Neuro-Ophthalmology. He was previously Consultant Ophthalmologist in Plymouth for Care UK, and Lead Ophthalmologist at the Lions Eye Clinic in Georgetown, Grand Cayman for 6 years. He practiced as a Laser Refractive Surgeon throughout England after qualifying and registering as a specialist with the General Medical Council of the United Kingdom in 2000. Pandit qualified in Medicine from the University of Wales College of Medicine, Cardiff in 1988 and gained his Fellowship from the Royal College of Surgeon, Edinburgh in 1993. He was awarded Master of Science from the University of Oxford in 2003. He has several articles and abstracts publications.