



**Service Priorities and Programmes**  
**Electronic Presentations**

**Convention ID:** 1020

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**Study on the ways of Vitamin B12 replacement in a general outpatient clinic**

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**Keywords:**

vitamin B12

replacement

Yan Chai Hospital General Practice Clinic

**Introduction**

Vitamin B12 (VB12) deficiency patients frequently present to the General Outpatient Clinic (GOPC) as anaemia, peripheral neuropathy or cognitive impairment. However, we found that replacement of VB12 in our cluster's GOPC is not well standardized, so is the monitoring strategy. Review of the replacement strategies may reveal the deficiency in care, and urge for standardization of management.

**Objectives**

To identify the patterns of VB12 replacement and monitoring strategies in Yan Chai Hospital General Practice Clinic. To compare the findings with international recommendations and make suggestions for improvement.

**Methodology**

90 patients with VB12 deficiency (defined as initial level lower than 133pmol/L) were identified from the clinic computer system from 1.1.2013 to 30.6.2013. Their age of diagnosis, gender, initial levels of VB12, folate, haemoglobin (Hb), MCH and MCV, parietal cell antibody status, intrinsic factor antibody status, presenting symptoms, replacement regime, subsequent monitoring were analyzed. Comparison with current international recommendations was done.

**Result**

Globally, cyanocobalamin and hydroxycobalamin are the two main parental forms of VB12 replacement formulary. In our cluster GOPC, only cyanocobalamin is available for replacement. 58 different replacement regimes were identified among 90 cases. Only 8 cases followed exactly the international regime. Others adopted modified or new regimes. The reason for adopting new regime was never documented. Amongst the 90 patients, 72 had subsequent VB12 level checked and 64 were normalized. For patients presented with anaemia (41/90), 31 had subsequent blood test to monitor Hb level. Amongst them, 20 showed improvement in Hb. Conclusion: Treatment of VB12 deficiency was very disorganized and heterogenous in our clinic. It was contributed by lack of international gold standard on replacement regime and lack of local guideline. There is no consensus on the need of monitoring of the treatment effect once treatment is initiated. According to NICE guideline, monitoring of treatment response

with full blood and reticulocyte count is recommended while monitoring of VB12 level is in general unnecessary. However, reticulocyte count was only checked in 3 out of 41 cases with anaemia. VB12 level was rechecked for most cases (72/90), 8 cases showed inadequate level despite good compliance. The use of cyanocobalamin and heterogenous replacement strategies may account for this. Further study on local tailor-made regime is necessary to formulate management guideline for our own population.