

## Psychiatric Symptoms in Megaloblastic Anaemia

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### Original Research Article

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**Abstract:** Long lists of psychiatric illness or symptoms have been documented to be caused by vitamin B12 deficiency. Psychiatric illness is common in both folate and vitamin B12 deficiency. This like the neuropathy has been attributed to a failure of the synthesis of S-adenosyl methionine. To study the prevalence of psychiatric symptoms in vit B12 and folate deficient patients. Hospital based retrograde analysis was done among 50 patients diagnosed as megaloblastic anemia. Psychiatric manifestation occurred in approximately 10-12 % of patients. Most of psychiatric symptoms resolved in due course of treatment.

**Keywords:** megaloblastic anemia, Vitamin B12, folic acid, psychiatric manifestation.

### INTRODUCTION

Vitamin B12 deficiency is not uncommon in India. Patients present with megaloblastic anemia, pancytopenia and sometimes neuropsychiatric manifestations. Subacute combined degeneration of the cord, peripheral neuropathy, dementia, psychotic depression and paranoid schizophrenia are well reported.

Psychiatric disturbance is common in both folate and cobalamin deficiencies. This, like the neuropathy, has been attributed to a failure of the synthesis of SAM, which is needed in methylation of biogenic amines (e.g., dopamine) as well as that of proteins, phospholipids, and neurotransmitters in the brain. Associations between lower serum folate or cobalamin levels and higher homocysteine levels and the development of decreased cognitive function and dementia in Alzheimer's disease have been reported.

A meta-analysis of randomized, placebo-controlled trials of homocysteine-lowering B-vitamin supplementation of individuals with and without cognitive impairment, however, showed that supplementation with vitamin B12, vitamin B6, and folic acid alone or in combination did not improve cognitive function. It is unknown whether prolonged treatment with these B vitamins can reduce the risk of dementia in later life [1].

### MATERIALS AND METHODS

A hospital-based retrospective and prospective analysis of case records of all patients admitted and diagnosed as anemia was taken and among anemic patients a haemoglobin < 10 g/dl and/or mean corpuscular volume > 95 fL and blood film findings consistent with megaloblastosis were included in the study. Diet (vegetarian/non-vegetarian), drug intake, previous blood transfusion and presenting symptoms were recorded. Presenting symptoms and findings were obtained from medical records of patients. Complete

blood counts, blood film examination, reticulocyte count and cobalamin and folate assays were done. Megaloblastic anaemia was diagnosed in 50 patients with anaemia. Those with a diagnosis of aplastic anemia and leukemia were excluded. The study period is for 6 months and all the patients admitted from the age group of 12 years to 60 years were included in the study

### RESULTS

Out of 50 patients diagnosed as megaloblastic anemia, 11 patients were found to presenting with neurological symptom and 6 patients were found to be with psychiatric manifestations. One patient was taking antipsychotic drug for his symptoms.

Out of 6 patients presenting with psychiatric symptoms, 2 patient has only vit B12 deficiency and 1 patients has only folate deficiency and 3 patients had both vit B12 and folate deficiency

**Table-1: Neuropsychiatric Manifestations in megaloblastic anemia**

Manifestation	neurological	psychiatric
No of patients( out of 50 )	11 ( 22 % )	6 (12%)

**Table-2: Vitamin deficiency in psychiatric patients**

	VIT B12 deficiency	Folate deficiency	Both vit B12 & Folate deficiency
No of patients with psychiatric manifestation	2	1	3

**DISCUSSION AND CONCLUSION**

Various psychiatric manifestations can occur in cobalamine deficiency [2]. Psychotic depression, paranoid schizophrenia [3] and other mood changes have been commonly reported. Reports on acute psychosis in cobalamine deficiency are rare [4]. These manifestations have been commonly reported in old persons.

Patients of cobalamine deficiency can develop neurological syndrome in presence or even absence of megaloblastic anemia [5]. Advanced neurological deficit may not be reversed even after treatment, therefor early recognition of deficiency is important. Subacute combined degeneration of the cord (SACD) is the common and classical presentation [6]. Dementia is another common neurological manifestation and mimics Alzheimer’s disease [7]. Somnolence, perversion of taste, smell and vision has also been reported. B12 deficiency can also present as acute reversible extrapyramidal syndrome [8].

Vitamin B12 deficiency may be found as incidental finding in some of patients who were taking antipsychotic drugs for their symptoms and in due course of treatment with cyanocobalamin injection with 1000 microgram im daily for 5-6 days, their many symptoms resolve. Most donot need antipsychotic drugs in due course of treatment for cynocobalamin.

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