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CASE REPORT March 2024

Supplementation of *Amra Beej Majja Churna* in Vitamin B12 Deficiency - A Case Study

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ABSTRACT

B12 is an important vitamin needed by red blood cells for maturation and DNA synthesis of myelin- producing oligodendrocytes. It remarkably supports the regeneration of nerves after injury. B12 is also involved in Hcy metabolism, transmethylation processes, fatty acid and nucleic acid synthesis, energy production etc. The symptoms of its deficiency range from glossitis to severe demyelination of nervous tissue. Indian population, with largely vegetarian food habit, is prone to harbor Vitamin B12 deficiency. There's a general belief that vegan diet is devoid of Vitamin B12 but a few recent researches have shown that the *Amra Beej Majja* can act as a cost effective food supplement not just for calcium, vitamin A and C but also for Vitamin B12. So, there's a felt need to evaluate therapeutically, the acclaimed role of *Amra Beej Majja Churna* as a supplement in people with Vitamin B12 deficiency. This paper presents a clinical study on the administration of *Amra Beej Majja Churna* in a patient with vegan dietary habits having Vitamin B12 deficiency which was clinically verified with low serum levels of the same. She presented with symptoms like hair loss, fatigue, tingling sensation in lower limbs and pain in calf muscles. The study was conducted for 2 months after which blood tests revealed increased serum Vitamin B12 levels from 189pg/ml to 217pg/ml along with significant symptomatic relief especially in tingling sensation and hair loss.

Key words: *Vitamin B12, deficiency, Amra Beej Majja, Case Report, Ayurveda.*

INTRODUCTION

Indian population, with largely vegetarian habit is prone to harbour general vitamino-mineral deficiencies. These days, a lot of vegetarians are even opting to exclude animal derived products like dairy and honey from their diet completely citing clinical disorders caused by their consumption. But, the risk of possible nutritional deficiencies for e.g. Vitamin B12, zinc, omega-3 fatty acids etc in a non-balanced vegetarian or vegan diet, may nullify general health benefits of this dietary pattern.

Although the data related with prevalence of B12 deficiency is limited; recent researches suggest that 47% North Indian population is deficient in this vitamin.[1]

Lack of Vitamin B12 may be caused by either insufficient intake or due to malabsorption. Insufficient intake is generally seen in vegetarians, especially in vegans. Malabsorption may occur in patients suffering from gastrointestinal conditions such as decreased or absent output of gastric intrinsic factor, achlorhydria, Crohn's disease etc. Risk factors for the same are alcohol abuse, old age, gastric bypass surgery,

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tapeworm infestation, strict vegetarian or vegan diet etc.[2]

General symptoms are glossitis, macrocytic anaemia, pain in calf muscles, hair loss, tingling sensation in lower limbs. General neurological symptoms are areflexia, cognitive impairment, irritability, peripheral neuropathy etc. Severe deficiency can cause irreversible damage to nervous system.[2]

There's a general belief that plant based diet is devoid of Vitamin B12 but a few researches have shown that *Amra Beej Majja* (mango seed kernel) might act as a good food supplement not just for calcium, proteins, vitamin A and C but also for Vitamin B12.[3]

Table 1: Recommended Dietary Allowances (RDAs) for Vitamin B12

Age	Male	Female	Pregnancy	Lactation
Birth to 6 months*	0.4 mcg	0.4 mcg		
7–12 months*	0.5 mcg	0.5 mcg		
1–3 years	0.9 mcg	0.9 mcg		
4–8 years	1.2 mcg	1.2 mcg		
9–13 years	1.8 mcg	1.8 mcg		
14–18 years	2.4 mcg	2.4 mcg	2.6 mcg	2.8 mcg
19+ years	2.4 mcg	2.4 mcg	2.6 mcg	2.8 mcg

*Adequate Intake (AI)

PATIENT INFORMATION

This is a case study of a female patient of age 35 years who came to OPD of Swasthavritta and Yoga with complains of severe hair loss, tingling sensation in lower limbs, pain in calf muscles, fatigue and flatulence since 6 months.

History of past illness: No history of any gastric disorder or long term use of NSAIDs / H2 receptor blockers.

Treatment history: She took multivitamin supplements for a month in the past but her symptoms did not improve.

Family history: No significant history of hair loss in the family.

Surgical history: none

Investigations

Serum Vitamin B12

CBC

Interventional plan

Amra Beej Majja Churna in a dose of 2 grams BD before meal with water for two months.

Assessment

Assessment was done at an interval of one month and after completion of treatment.

Subjective Assessment - Shown in table 2.

Table 2

Associated Symptoms	BT	After one month	After 2 months
Hair loss	++	+	-
Tingling sensation	++	+	-
Pain in calf muscles	++	+	-
Fatigue	++	+	-
Flatulence	++	++	+

She saw a major reduction in her symptoms. Her hair loss and calf muscles pain stopped completely. Tingling sensation occurs only occasionally that too when she folds her legs in a particular position for a long duration. She feels more energetic since she started on intervention.

After 2 months betterment in all symptoms was found.

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Objective Assessment - Shown in Table 3

Table 3

Blood test	Before treatment	After treatment
Serum Vitamin B12	189.6 pg/ml	217.2 pg/ml
HB	11.6 gm%	11.3gm%
RBC count	3.98 mil/cu.mm	3.90 mil/cu.mm
Total WBC count	6500/cu.mm	6100/cu.mm
Packed Cell Volume	33.1%	32.7%
Mean Corpuscular Volume	83.1cu micron	83.8 cu micron
Mean Corpuscular Hb	29.1 pg	29 pg
Mean Corpuscular Hb con.	35 g/dl	34.6 g/dl

After 2 months, her blood samples were taken and analysed again. Her Serum Vitamin B12 levels increased from 189.6 pg/ml to 217.2 pg/ml.

No significant change in the CBC reports.

Fig. 1 and 2 are reports from before intervention. Fig 3 and 4 are reports after intervention.

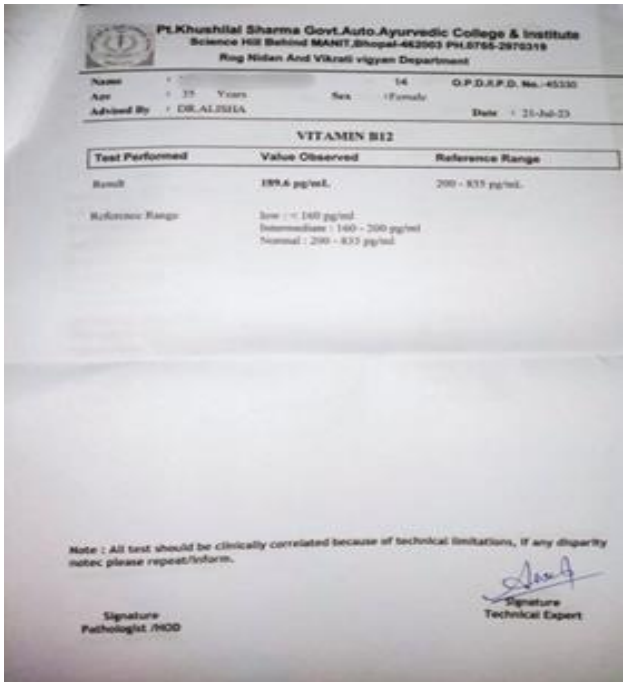

Fig. 1: Before Intervention

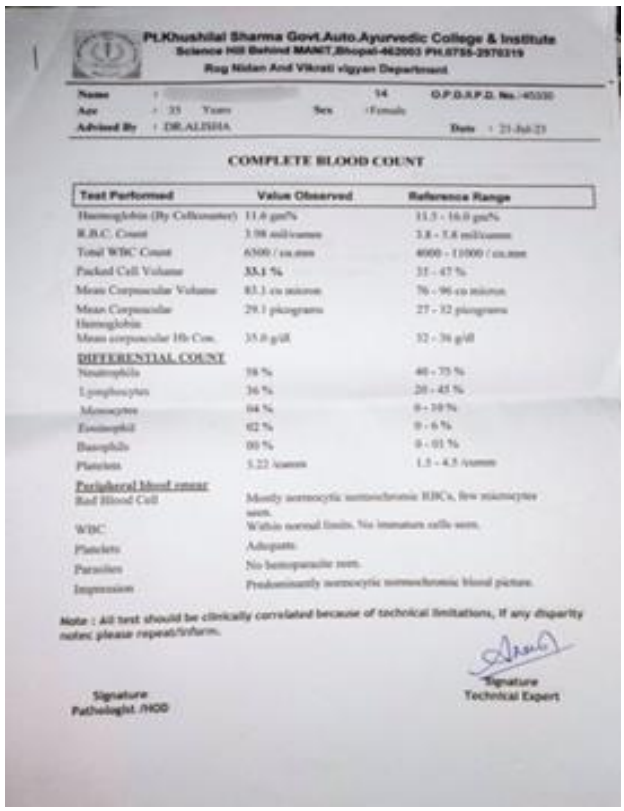

Fig. 2: Before Intervention

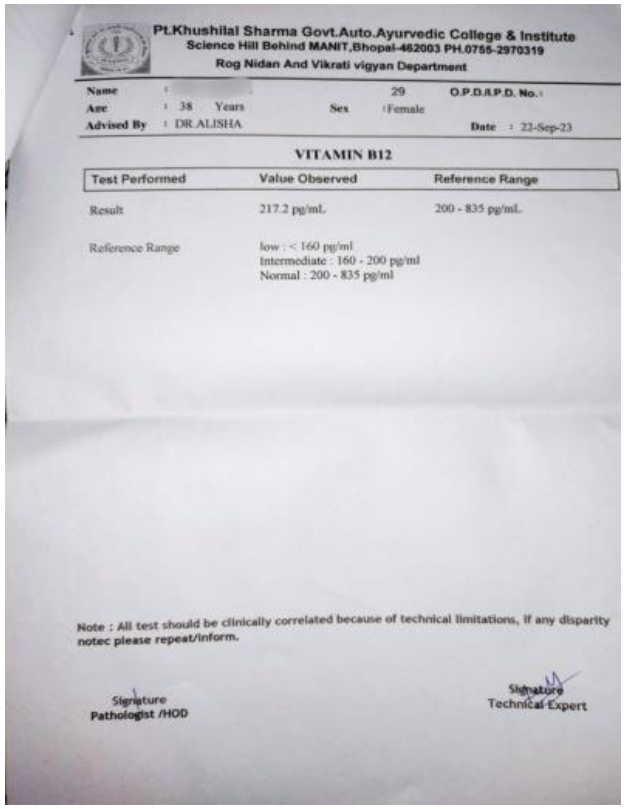

Fig. 3: After Intervention

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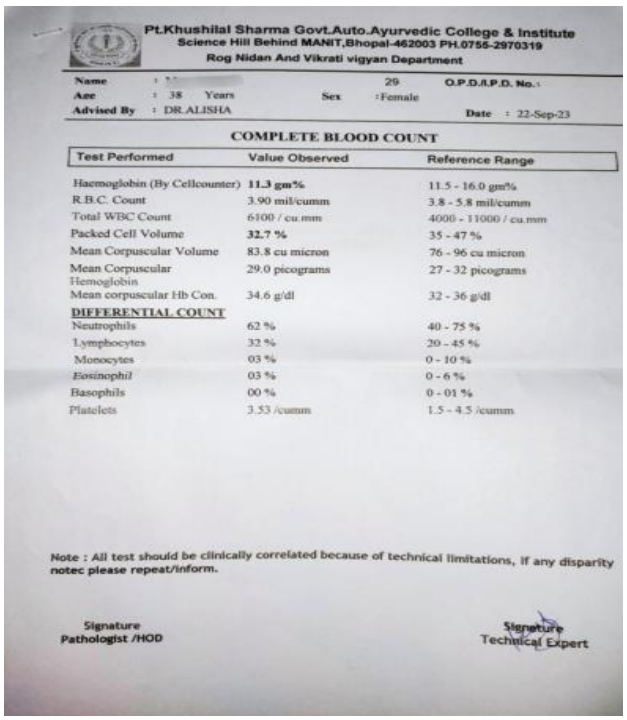

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Name : 29 O.P.D./I.P.D. No. :
Age : 38 Years Sex : Female
Advised By : DR.ALISHA Date : 22-Sep-23

COMPLETE BLOOD COUNT

Test Performed	Value Observed	Reference Range
Haemoglobin (By Cellcounter)	11.3 gm%	11.5 - 16.0 gm%
R.B.C. Count	3.90 mil/cumm	3.8 - 5.8 mil/cumm
Total WBC Count	6100 / cu.mm	4000 - 11000 / cu.mm
Packed Cell Volume	32.7 %	35 - 47 %
Mean Corpuscular Volume	83.8 cu micron	76 - 96 cu micron
Mean Corpuscular Hemoglobin	29.0 picograms	27 - 32 picograms
Mean corpuscular Hb Con.	34.6 g/dl	32 - 36 g/dl
DIFFERENTIAL COUNT		
Neutrophils	62 %	40 - 75 %
Lymphocytes	32 %	20 - 45 %
Monocytes	03 %	0 - 10 %
Eosinophil	03 %	0 - 6 %
Basophils	00 %	0 - 01 %
Platelets	3.53 /cumm	1.5 - 4.5 /cumm

Note : All test should be clinically correlated because of technical limitations, if any disparity notec please repeat/inform.

Signature
Pathologist /HOD

Signature
Technical Expert

Fig. 4: After Intervention

DISCUSSION

Vitamin B12 is generally not found in vegan food sources. In this case, her symptoms did not improve even after taking multivitamin supplements for 1 month. Her blood samples were taken both before and after treatment. Though there isn't any difference in CBC, Serum Vitamin B12 levels have definitely increased.

100 grams of *Amra Beej Majja* contains 120mcg of Vitamin B12. 4 grams per day completes the nutritional requirement of Daily required amount of Vitamin B12.

Apart from B12, it contains 17 essential amino acids, minerals like calcium, magnesium, iron and zinc in good amounts which might be the additional reason for the improvement in her symptoms.

Her symptoms also improved. Her hair fall and pain in calf muscles stopped completely. Tingling sensation also stopped. The occasional tingling sensation might be due to compression of nerves due to folding of legs for longer durations and not much related with the deficiency symptoms. Betterment in flatulence symptom could be due to prebiotic action of *Amra Beej Majja Churna*. For this, stool test is recommended for further microbiological studies.

CONCLUSION

It can be concluded that *Amra Beej Majja Churna* can be recommended in Vitamin B12 deficiency. It could prove to be a cost-effective nutrient source without side effects of supplements.

Declaration of patient consent

Authors certify that they have obtained patient consent form, patient has given her consent for reporting the case along with the images of her test results in the journal. The patient understands that her name and initials will not be published and due efforts will be made to conceal her identity, but anonymity can't be guaranteed.

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