



AMERICAN JOURNAL OF PHARMTECH RESEARCH

Journal home page: <http://www.ajptr.com/>

Ayurvedic management by Nidanaparivarjana (Avoidance of Etiological Factor) and Pathyapathya (Do and Don'ts) in Vitamin B₁₂ deficiency W.S.R. to Pandu Vyadhi (Anemia)- A case report

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ABSTRACT

The incidence of lifestyle disease like polycystic ovarian syndrome, *Uccharaktachapa* (~hypertension), *Sthaulya* (~obesity), *Madhumeha* (~Diabetes) as well as Iron deficiency Anemia are increasing day by day. Blood loss is one major cause of the iron deficiency. Women are at a higher risk as they lose blood during menstruation. Even a lack of iron in the diet can lead to this deficiency. Vitamin B₁₂ is a nutrient that helps keep the body's blood and nerve cells healthy and helps make DNA, the genetic material in all of the cells. Vitamin B₁₂ also helps prevent megaloblastic anemia, a blood condition that makes people tired and weak. Vegetarians or vegans, menstruating and pregnant women and individuals who donate blood more frequently are at an increased risk of iron deficiency. As per the clinical features, Vit B₁₂ deficiency can be considered among the types of *Pandu Vyadhi*. The aim of the study is to assess the role of *Ayurvedic Nidanaparivarjana* and *Pathyapathya* in Vit B₁₂ deficiency as a first and the most important line of treatment in *Ayurveda*. In this case study, the strict vegetarian female, aged 27 years came with Vit B₁₂ (also called cobalamin) deficiency with the symptoms i.e., tiredness, loss of appetite, weight loss, constipation, irritation and confusion. She was treated by *Ayurveda* with *Nidanaparivarjana* and *Pathyapathya* for 3 months without any allopathic intervention. After the completion of treatment protocol, her Vit B₁₂ level became normal with marked improvement in the above-mentioned associated symptoms.

Keywords: *Ayurveda*, Lifestyle disease, *Nidanaparivarjana*, *Pandu Vyadhi*, *Pathyapathya*, Vitamin B₁₂ deficiency.

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Received 10 April 2023, Accepted 9 May 2023

Please cite this article as: Baraiya HP *et al.*, Ayurvedic management by Nidanaparivarjana (Avoidance of Etiological Factor) and Pathyapathya (Do and Don'ts) in Vitamin B₁₂ deficiency W.S.R. to Pandu Vyadhi (Anemia)-A case report. American Journal of PharmTech Research 2023.

INTRODUCTION

Vitamin B₁₂ deficiency anemia is a condition in which the body does not have enough healthy red blood cells, due to a lack (deficiency) of vitamin B₁₂. This vitamin is needed to make red blood cells, which carry oxygen to all parts of the body. Without enough red blood cells, the tissues and organs don't get enough oxygen. Without enough oxygen, the body can't work as well. Folic acid, also called folate, is another B vitamin. Anemias caused by a lack of vitamin B₁₂ or a lack of folate are 2 types of megaloblastic anemia. With these types of anemia, the red blood cells don't develop normally. They are very large. And they are shaped like an oval, not round like healthy red blood cells. This causes the bone marrow to make fewer red blood cells. In some cases, the red blood cells die sooner than normal. Risk factors for vitamin B₁₂ deficiency anemia include a family history of the disease, Autoimmune diseases, including type 1 diabetes, Crohn's disease, HIV, strict vegetarian diets etc. Symptoms may include Weak muscles, numb or tingling feeling in hands and feet, trouble walking, nausea, decreased appetite, weight loss, irritability, lack of energy or tiring easily (fatigue), diarrhea, smooth and tender tongue, fast heart rate etc. ^[1] This type of anemia is usually found during a medical exam through a routine blood test. The amount of vitamin B₁₂ need each day depends on age. Average daily recommended amounts in adults are around 2.4 mcg to 2.6 mcg.

In *Ayurveda*, *Pandu Vyadhi* is a disease characterized by pallor of body which resembles with 'Anemia' of modern science. Rakta has been considered as a key factor for the *Jeevana*, *Preenana*, *Dharana* and *Poshana Karma* of the body. ^[2] Many times, it is seen that *Rakta* gets vitiated by *Doshas*, mainly by *Pitta Dosha* as *Rakta* and *Pitta* share an *Ashrayashrayi Bhava*, leading to *Pandu Vyadhi*. ^[3] The *Lakshanas* are common in both vitamin B₁₂ and *Pandu Vyadhi*, i.e., *Daurbalya*, *Peeta- Mutra Shakrut*, *Trushna*, *Murcha*, *Daha* etc. ^[4] Thus we can follow a protocol of *Pandu Vyadhi* for vitamin B₁₂ deficiency. ^[5]

Treatment in allopathy may include vitamin B₁₂ injections and folic acid pills etc. supplements. Treating Vit B₁₂ deficiency in a challenge and but in such conditions *Ayurvedic Pathyaapthya* and *Nidanaparivarjana* can provide a better outcome. Foods that are rich in folic acid include orange juice, oranges, Romaine lettuce, spinach, liver, rice, barley, sprouts, wheat germ, soy beans, green and leafy vegetables, beans, peanuts, broccoli, asparagus, peas, lentils, chickpeas (*garbanzo beans*) etc. Foods that are rich in both folic acid and vitamin B₁₂ include eggs, meat, poultry, milk, shellfish and fortified cereals can be advised for the diet modification.

Patient information:

A 27 years old married female patient, strict vegetarian, housewife by occupation with the complaints of tiredness, loss of appetite, weight loss, constipation for 6 months. Other symptoms can include confusion and irritation in the last 2 months. She had a history of delayed menstruation with mild pain in abdomen before the onset of menstruation and during menstruation associated with low back pain and general weakness for 1 year. She noticed there she was feeling too much tiredness during day to day house hold works. She cannot wake up early in the morning as she couldn't feeling freshness due to the condition. She visited nearby allopathy clinic and was prescribed with tablets (Details are unknown). She had taken those tablets for 1 month. But she didn't get even any symptomatic relief. She revisited the clinic for the same complaints and was advised for Serum Vit B₁₂ investigation with CBC (complete blood count). In the report, her Vit B₁₂ level was 61 pg/ml which was below the normal limit (Figure 1). Patient was advised for Vit B₁₂ injections. She had taken 19 alternate doses during July and August 2021. After completion of this treatment, she got very less improvement in the symptoms. On 6/12/2021, patient approached Ayurvedic management for the needful.

Diagnostic assessment:

It was based on detailed history taking, *Dashvidha Pariksha*, *Ashtavidha Pariksha*, clinical examinations and investigations which is given below.

Past History:

No history of DM/HTN/hypo-hyperthyroidism or any other major medical or surgical history.

Family history:

No history of same illness in any of the family members.

Personal History:

Diet – Strict vegetarian

Appetite - Reduced

Bowel - Regular, once a day.

Micturition - 4-5 times a day, 1 time at night.

Sleep - 5-6 hours in Night-time, 2-3 hours in Daytime

Habits - Tea, twice a day

Rajo Vruttanta (~menstrual history):

Menarche - 13 years of age

Menstrual cycle –

Nature - Irregular

Duration - 30-35 days

Bleeding phase – 4-5 days

Color – Red

Clots – Absent

No. of pads used /day – 2 pads/day on 1st 2 days, 1 pad/day on 4th & 5th Day

Associated complaints –Mild lower abdomen pain, low back pain and general weakness.

Vaivahika Vruttanta (marriage history):

Married life – 7 months

Contraceptive history- Natural method- calendar rhythm

Vyavaya Vruttanta (~coital history):

1-2 times in a week

No *Maithuna Asahishnuta* (~no dyspareunia)

Prasava Vrittanta (~Obstetric history) - Nil

General examination:

Built - Moderate

Nourishment - Moderate

Temperature - 98.4⁰ F

Respiratory rate -20/min

Pulse rate – 76/ min

B.P - 110/70 mm of hg

Height –150 cms

Weight - 50 Kg

Tongue: Uncoated

Pallor/Icterus/Cyanosis/Clubbing/Edema/Lymphadenopathy: Absent

Systemic examination CVS: S1 S2 Normal CNS: Well oriented, conscious

RS: normal vesicular breathing, no added sounds

Ashtavidh Pareeksha:

Nadi -76 bpm

Mootra- 4-5 times a day, 1 time at night

Mala – Once/ day, unsatisfactory

Jihwa- *Alipta*

Shabda - *Avisesha*

Sparsha - *Anushna sheeta*

Druk - *Avisesha*

Aakruti – Madhyama

Dashavidha Pareeksha:

Prakruti - Pitta + Kapha

Vikruti – Rasa, Rakta

Sara - Twakasara

Samhanana - Madhyama

Pramana - Madhyama

Satmya - Sarvarasa

Satva- Avara

Aahara Shakti - Abhyavaharana Shakti -Manda

Jarana Shakti - Manda

Vyayama Shakti – Avara

Vaya -Youvana

Gynecological Examination:

Breast examination- NAD, B/L soft non tender

External genitalia – Inspection – Pubic hair - Equally distributed

Clitoris -Healthy, NAD

Discharge per vagina – Present (Thin Mucous white discharge)

Pelvic Examination:

Per speculum and Per vaginal examination: Normal

Clinical findings:

Vit B-12 level- 61 pg/ml (14/4/2021)- before treatment (Figure 1)

Vit B-12 level- 272 pg/ml (8/4/2022) - after treatment (Figure 2)

Complete blood count before and after treatment- within normal range

Urine routine and Micro Before and after treatment - within normal range

Blood sugar and C. reactive protein - within normal range

Ultrasonography for abdomen and pelvis- normal USG study

Chikitsa Vrittanta (~Therapeutic interventions) with timeline:

The line of treatment was followed as *Nidanaparivarjan*, *Pathya* (~do) and *Apathya* (~don't).

Following diet was strictly followed by the patient from 6th January 2022 to 6th April 2022 according to her appetite and digestion capacity as a ***Pathya (do)*** without any medical intervention.

Morning breakfast -

Beet and Palak soup,

Milk with Karjur and Anjeer

Lunch - Cooked Tuber Daal with rice,
Cooked Green leafy vegetables with wheat roti

Evening food- Seasonal fruit i.e., apple, guava, banana, chiku, orange, grapes etc.

Dinner - Cooked Wheat Shira, Moong daal, Khichdi;
Cooked Green leafy vegetables with wheat roti

Any extra food in a week at morning or evening- Dry fruits i.e., Kismis, almond, Pistachio, Kaju;
Drink coconut water, lemon juice, orange juice

Apathya (don'ts):

She was advised to avoid *Divaswapna* (~day sleep), *Ratrijagarana* (~night awake) and *Manasika Bhava* i.e., *Chinta* (~stress), *Shoka* and *Bhaya* (~fear) as well as outside food, packed food, bakery food, stale food and junk food which were the habit earlier.

RESULTS AND DISCUSSION

In follow up After 3 months of *Nidanaparivarjana* and *Pathyapathya*, patient got marked improvement in associated symptoms and Vit B12 level increased from 61 pg/ml to 272 pg/ml which was within the normal range (Figure 1 & 2).



Figure 1: Before treatment report

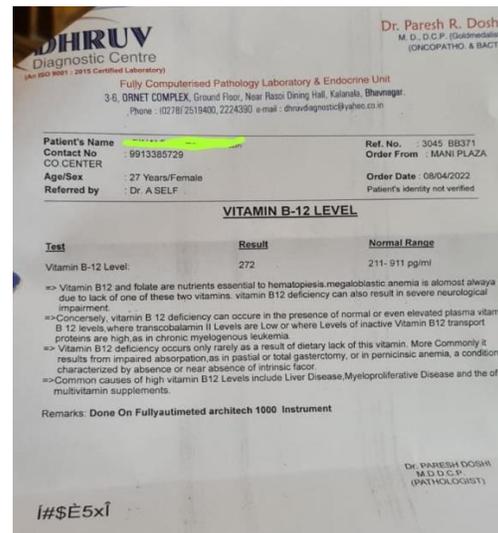


Figure 2: After treatment report

“*Pathyae sathi gatir naasti kimoushada savenam, Pathye Aasathi gatir naasti kimoushada savenam.*” [6]

Ayurveda includes *Ahara* as one among the tripods giving the first and foremost place to *Ahara*. *Pathya Ahara* (~a proper diet) is defined as the *Ahara* which is congenial to the tissues of the body and relished by the person. The *Pathya* is the one which keeps the person healthy, maintains

normal body functions leads to proper functioning of the organs, nourishes the mind and intellect, prevents diseases and at the same time corrects the irregularities that may occur in the body. The planning of diet mentioned in our classical literature is very rational and based on certain principles. Lot of importance is given to the diet with regard to its processing, quality and quantity. Due consideration is given to the atmosphere, psychological condition, status of health, digestion etc. of the person while dealing with this issue. The diet should also be planned according to the age, season, habitat and the preference of the person. The proper use of diet not only prevents the diseases but plays major role in the management of the diseases. ^[7] It is possible if one uses diet considering the *Tridosha*, *Prakriti* and *Satmya* of person as well as *Panchabhautika* composition of dietary substances.

Nidana is the prime factor for the causation of the disease. That is why it is very necessary to avoid the etiological factors and it is the first step in the management of any disease. Acharya Sushruta is of opinion that factors responsible for causation of the disease must be avoided to prevent further pathogenesis and it is the first line of treatment in any disease. ^[8] Acharya Charaka instructs to avoid the causative factor for smooth recovery of any disease. ^[9] *Nidanaparivarjana* helps in prevention and cure of the disease by avoiding the causative factors in the form of *Ahara* (~Food) / *Vihara* (~Lifestyle) or both. Further *Nidanaparivarjana* helps in stoppage of progression of the disease by avoiding respective *Nidanas*. ^[10] All the foods which were given to the patients are highly rich in all the nutritional values.

In the present case study, the patient belonged to age group which predominance of *Pitta Dosha* and also the *Pitta* predominant *Prakruti* of patient leads to *Pandhu Vyadhi* w.s.r. to Vitamin B₁₂ deficiency. One of the *Nidana* was *Diwasapna* which leads to *Agnimandya* causing *Dhatvagnimandya* leading to *Rasarakta Dhatudushti* and then leads to Vitamin B₁₂ deficiency. The patient is strict vegetarian which itself leads to Vitamin B₁₂ deficiency.

CONCLUSION:

In present era it is the need of time to follow *Ayurvedokta Hitakara Ahara Vihara Vidhi* (~Wholesome diet and life style) to prevent and manage many lifestyle disorders. *Ayurveda* plays an important role in prevention as well as cure of different diseases with *Nidanaparivarjana* and *Pathyapathya*. Treating Vit B₁₂ deficiency is a challenge but, in such conditions, *Ayurvedic Pathyaapthya* and *Nidanaparivarjana* can provide a better outcome to achieve a happy, healthy and longer life. The present case study also helps us to understand *Pandu Vyadhi* according to Vitamin B₁₂ deficiency.

Declaration of patient consent:

Authors certify that they have obtained patient consent form, where the patient has given his consent for reporting the case along with the images and other clinical information in the journal. The patient understands that his name and initials will not be published and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

Financial support and sponsorship: Nil

Conflicts of interest: There are no conflicts of interest.

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