



(CASE REPORT)



An ayurvedic management of pandu roga with special reference to iron deficiency anaemia: A case study

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Abstract

Anaemia is common micronutrients disease affects health status of very large population of whole world. Iron deficiency is the most common causes of Anaemia. *Ayurveda* described *Pandu Roga* which correlated with Anaemia. *Ayurveda* mentioned causes, symptoms and treatments of *Pandu*. The *Pandu Roga* involves lack of haemoglobin due to poor intake of iron through dietary sources, poor absorption and digestive problems may also leads Anaemia.

Keywords: *Ayurveda*; *Pandu*; Anaemia; Iron deficiency

1. Introduction

Around 30% of the total world population is anemic and half of these, some 600 million people, have iron deficiency. Iron deficiency Anaemia occurs when iron losses or physiological requirements exceed absorption. Blood loss, malabsorption, physiological demands are the main causes for iron deficiency Anaemia. Worldwide, hookworm and schistosomiasis are the most common cause of gut blood loss.[1] Iron is involved in the synthesis of haemoglobin and is required for the transport of electrons within cells and the number of enzyme reactions. Non-haem iron in cereals and vegetables is poorly absorbed but makes a greater contribution to overall intake, compared to well-absorbed haem iron from animal products. Fruits and vegetables containing Vitamin C enhance iron absorption, while the tannin in tea reduces it. There is no physiological mechanism for the excretion of iron, so haemostasis depends on the regulation of iron absorption. This is one of the most important nutritional causes of ill health in all parts of the world.[2] At times of rapid growth, such as infancy and puberty, the iron requirement increases and may outstrip absorption. The complications of iron deficiency Anaemia include:- Increased risk of infections, heart conditions, developmental delay in children, pregnancy complications, depression.[3] The investigations that can be done in this disease are CBC, Sr. Ferritin, iron, total iron-binding capacity (TIBC), etc. The management of iron deficiency Anaemia is oral iron replacement is appropriate (ferrous sulphate 200mg 3 times daily) for 3-6 months to replete iron stores. Many patients suffer gastrointestinal side-effects with ferrous sulphate, including dyspepsia and altered bowel habit.[4] The short-term prognosis for most patients is excellent. However, if the underlying cause is not corrected, the prognosis is poor. Considering *Panduta* (pallor) as the predominant sign, the disease is termed *Pandu Roga*. The correlation of iron deficiency Anaemia (IDA) can be made with *Pandu Roga*, because of the predominance of *Panduta* or pallor in the whole body [5].

2. Case Report

A female patient of 24 years old, non-diabetic, non-hypertensive, came to Sane Guruji Ayurveda Hospital, Hadapsar on 25 Feb 2022 with complaints of swelling in bilateral feet off and on, paleness in the skin, lethargy, whenever bluish

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bruises in the skin appear after any injury it recovers within a menstrual month by itself, hair fall (50 strands/day), palpitation since 3 months. She has a normal history.

2.1. On examination

- The general condition of the patient is stable,
- Pulse rate- 86/ min,
- Bp-110/70mmhg,
- Palor- ++, icterus absent,
- Weight-40kg,
- Height-150 cm
- Rs-b\l clear
- Cvs- s1, s2, normal,
- Cns- conscious, oriented

On her complete blood count- haemoglobin level (7.6g/dl) was found low. On given one-month Ayurvedic medicines she had found significant relief in symptoms (swelling was resolved, pallor decreased, she was feeling energetic, hair fall (10 strands/day, palpitation had also decreased), and increased in haemoglobin level (12.5mg/dl). Here a case report was done by giving *Ayurvedic* medicines in the line of treatment of *Pandu*, marked improvement was noticed.

Table 1 Treatment given

Sr.No	Formulation	Dose, Frequency and Time	Anupana	Duration
1	<i>Amalaki Rasayanaa</i>	1 gm twice daily	<i>Madhu and Koshanja</i>	1 month
	<i>Navayas Lauhaa</i>	333 mg twice daily		
	<i>Kashis Bhasma</i>	166 mg twice daily		
	<i>Swarnamakshik Bhasma</i>	83 mg twice daily		
	<i>Giloyaa Satva</i>	166 mg twice daily		
	Mixed all and taken 1 teaspoon twice daily on an empty stomach			
2	<i>Vidangasav</i>	20 ml twice daily	20 ml Jal	1 month
3	<i>Raktaposhak Vati</i>	2 Tablet twice a day	Jal	1 month

2.2. Clinical Assessment

The following clinical findings were assessed before and after the treatment of one month: *Vaivarnata* (pallor), *Daurbalyata* (weakness), *Shrama* (fatigue), *Aruchi* (anorexia), *Kopana* or *Adhirata* (irritability), *Shwasa* (dyspnoea), *Hridayaspandana* (palpitation), and *Shotha* (oedema).

2.3. Laboratory Assessment Complete blood count was assessed pre and post treatment

2.3.1. Grading of Clinical Features

- G0 (grade point 0)- No clinical feature/symptom
- G1 (grade point 1)- Mild clinical feature/symptom
- G2 (grade point 2)- Moderate clinical feature/symptom
- G3 (grade point 3)- Severe clinical feature/symptom

2.3.2. Grading of Blood Haemoglobin Level

- G0- Haemoglobin level > 11g/dL
- G1- Haemoglobin level 9.5g/dL to < 11g/dl
- G2- Haemoglobin level 7.5g/dL to < 9.5g/dl
- G3- Haemoglobin level 6g/dL to <7.5g/dl

2.3.3. Overall Assessment of Result

The results were assessed on the basis of observations of clinical features and laboratory findings before and after treatment.

- Very Good- Improvement 75% and above
- Good- Improvement 50% and above but < 75%
- Fair- Improvement 25% and above but <50%
- Poor -No improvement or marginal improvement <25%

Table 2 Assessment

Assessment	Before treatment	After treatment
Clinical assessment	G2	G1
Laboratory assessment	G2	G0
Overall assessment	-	Very poor

Table 3 The report of complete blood count mentioned below

Test	Pre (25/2/2022)	Post (10/4/2022)	Normal range
Hb	7.6g/dl	12.7g/dL	12 - 17
WBC	6.07/ μ L	5.37/ μ L	4,000 - 11,000
NEUT	64.5%	61.9%	40 - 80
LYMPH	28.3%	30.7%	20 - 40
MONO	6.1%	6.1%	2.0 - 10.0
EO	0.8%	1.1%	1.0 - 6.0
BASO	0.3%	0.2%	0.0 - 2.0
RBC	4.92/ μ L	5.62/ μ L	3.8 - 5.50
HCT	29.6%	40.7%	36.0 - 50.0
MCV	60.2fL	72.4fL	83.0 - 110.0
MCH	17.5pg	22.6pg	33.0 - 37.0
MCHC	29.1g/dL	31.2g/dL	31.0 - 37.0
PLT	330/ μ L	259/ μ L	150 - 400

Diet - Carrot, Beetroot, Green Leafy Vegetables, Tomato, Egg, Meat, *Gud* (Jaggery), *Draksha*, *Munakka*, Raisins, *Kharjur*, prepare food in *Lauha patra* etc As 100m of *Gud* (jaggery) contain -iron-11mg

3. Discussion

Pandu means pallor or whiteness. In this disease, there is pallor on the skin, due to deficiency of blood tissue either in form of haemoglobin or red blood cells, hence called Anaemia^[7]. The causative factor of *Pandu* are excessive intake of alkaline, sour, pungent and salty, too hot, incompatible and unsuitable food, suppression of natural urges, *ManasBhav*-anxiety, fear, anger causes *Pitta* vitiation and is propelled to the body by aggravated *Vata*.^[8] Palpitation in the heart, dryness of skin, absence of perspiration, fatigue, cracks in the skin, salivation, looseness in the joints and whole body, urge for eating mud, oedema under the eye lids, slight yellowish color to urine and faeces^[9]*Agni vaishmya* is caused by two factors- *Nija* that can be due to improper absorption, *Agantuja* that can be due to blood loss. *Agni vaisamy* leads to *Vata vridhi* and *Oja kshya* and ultimately *Dhatu shaithilya*. Poor absorption is the main cause of iron deficiency Anaemia. Based on the principle of *Ayurveda* substances of like properties will cause increase of the same attributes. According

to this principle, *Lauhaa* (Iron) can be used in the treatment of iron deficiency Anaemia, considering it to be best among haematinic preparations.

Table 4 Drug formulations

Sr.No	Drug	Scientific Name	Name of Formulation		
			<i>Navaya Lauha</i>	<i>Abra Lauha</i>	<i>Vidangasav</i>
1	<i>Lauhaa Bhasma</i>	-			-
2	<i>Pippali</i>	<i>Piper longum</i>			
3	<i>Marich</i>	<i>Piper nigrum</i>			
4	<i>Shunti</i>	<i>Zingiber officinale</i>			
5	<i>Haritaki</i>	<i>Terminalia chebula</i>			-
6	<i>Bhibhitaki</i>	<i>Terminalia chebula</i>			-
7	<i>Amalaki</i>	<i>Embelica officinalis</i>			
8	<i>Mustaka</i>	<i>Cyperus officinalis</i>			-
9	<i>Vidanga</i>	<i>Embelicaribes</i>			-
10	<i>Abhrak Bhasma</i>	-	-		-
11	<i>Shatavari</i>	<i>Asparagus racemosus</i>	-		-
12	<i>Lodhra</i>	<i>Symplocos racemosa</i>	-	-	
13	<i>Kanchanar</i>	<i>Bauhinia variegata</i>	-	-	
14	<i>Ela</i>	<i>Elettaria cardamomum</i>	-	-	

3.1. Amalaki Rasayanaa,

Amalaki (*Phyllanthus emblica* L.) has *Tridosahara*, especially *Pittashamak* (pacifying *Pitta*), *Rasayana* (rejuvenative) and *Shonitsthapana* properties, thus nourishes the Dhatu and is also known to enhance the absorption of iron.^[13] *Amalaki* is also having antioxidant properties by virtue of antioxidants present in it which include Vitamin C, bioflavonoids, flavones, polyphenols, and carotenoids.^[14] Supplementation of antioxidant vitamins with iron supplementation may offer a better response in the management of IDA.^[15]

3.2. Swarna Makshika Bhasma

Has been used for *Pandu* (Anaemia), *Mandagni* (poor digestion) etc ^[10] as well as a potent *Rasayanaa* drug.^[16]

Amruta (*Tinospora cordifolia*) contains vitamins B, C and E, Ferrous (Iron), Calcium, Copper, and Potassium.^[17] Vitamin C helps in absorption of iron and increases the bioavailability of body.^[18] *Giloyaa* sat enhances the formation of haemoglobin and red cells.

AbhraLauha is a Herbo mineral *Ayurvedic* proprietary medicine, which is extremely effective as *Raktavardhak* and *Balya* as it increases *Rasa* and *Raktadhatvagni*. *Abhra Loha* is equipotent as ferrous sulphate in treatment of iron deficiency Anaemia. As one of the cause of *Pandu Roga* is *Krimi* (worm infestations) *Vidangasav* is used to treat worm infestation as well as do *Shodhan*. All the formulations help in breaking the pathogenesis of *Pandu Roga* thus,

4. Conclusion

Pandu Roga is *Pitta pradhan vyadhi* of *Rasvaha* and *Raktavaha srotas*. By the *Ayurvedic* formulations (*Amalaki Rasayana*, *Navayas Lauha*, *Kasis Bhasma*, *Swarnamakshik Bhasma*, *GiloyaSatva*, *Vidangasav*, *AbhraLauhaa*) by their properties and actions work in breaking the pathogenesis of *Pandu*. As the drugs are highly potent in *Lauhaa* (Iron) preparations along with other ingredients which help in increasing haemoglobin level and general symptoms in the patient effectively in just one month duration. So, *Ayurvedic* formulations should be used as primarily intervention in iron deficiency anaemia (*Pandu*) without any side effects.

Compliance with ethical standards

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Disclosure of conflict of interest

This work is not published anywhere. The authors declare no conflict of interest

Statement of ethical approval

Ethical approval is not applicable for this case study as this is a single case study.

Statement of informed consent

It is certified that I have taken appropriate patient consent. In the form the patient has given her consent for clinical information and laboratory to be reported in the journal. The patient understood that their name and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed

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