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# A case report on the use of Ayurveda in the treatment of Iron Deficiency Anaemia

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## ABSTRACT

Among pregnant women and young children, nutritional iron deficiency anaemia is a worldwide public health concern and the leading cause of anaemia. Iron deficiency anaemia is often caused by blood loss or mal-absorption. Iron deficiency anaemia and *Pandu Roga* are very similar clinical entities. *Pitta Pradhan Vyadhi* is *Pandu Roga*. The vitiated *Doshas* in *Pandu Roga* cause a disruption in tissue metabolism, which results in *Dhatu-Shathilya* in all of *Dhatu*. Paleness is the dominant colour across the body. The *Rasavaha* and *Raktavaha Srotasas* play a significant role in the development of *Pandu*. In this case study, we see a 22-year-old female patient with iron deficiency anaemia who, after a month of treatment with Ayurvedic formulations in the *Pandu Roga* line of treatment and iron-rich dietary supplements, experienced a dramatic improvement in her symptoms (less swelling, no pallor, increased energy, decreased palpitation, and hair loss of 10 strands per day) and an increase in her haemoglobin level (from 8.6g/dl to 12.7g/dl) at a very rapid pace. The *Samprapti* of *Pandu Roga* may be broken with the aid of the formulas. Iron deficiency anaemia (*Pandu*) may be effectively treated with Ayurvedic medication.

**Key words:** Iron, Deficiency, Nutritional, Ayurvedic, Medicine, Anaemia.

## INTRODUCTION

Iron deficiency anaemia is still a major problem in the world today, impacting a wide variety of people. The practice of Ayurveda, an old Indian medical system, has grown in popularity as a comprehensive and conventional strategy to treat this illness.<sup>[1]</sup> The ancient Indian medical system known as Ayurveda, which literally translates to "science of life," takes a holistic view of health by honouring the unity of soul, body,

and mind.<sup>[2,3]</sup> The notion of balancing the body's *Doshas* - *Vata*, *Pitta*, and *Kapha* - is central to Ayurvedic therapy for iron deficient anaemia. It is thought that anaemia and other health problems stem from imbalances in these *Doshas*. In order to bring the body back into harmony, Ayurvedic doctors may often recommend a mix of food changes, herbal medicines, and behavioural changes.<sup>[4,5]</sup>

When it comes to Ayurvedic therapy for anaemia, diet is king. The natural way to increase iron levels is to eat more iron-rich foods like lentils, sesame seeds, and leafy greens.<sup>[6]</sup> Herbs with iron-enhancing characteristics, such as *Punarnava*, *Triphala*, and *Amalaki*, are also recommended for ingestion according to Ayurveda. Iron supplementation and improved absorption and assimilation are two goals that these herbs are thought to accomplish. *Panchakarma* is a detoxification procedure that is often used in Ayurvedic treatments to cleanse the body of harmful substances and restore its vitality.<sup>[7,8]</sup> It is believed that *Panchakarma* treatments, such as

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*Shirodhara*, which involves pouring heated herbal oil across the forehead, promote blood circulation and iron absorption. *Abhyanga* is a full-body massage that uses herbal oils to improve nutrition absorption and vital energy flow.<sup>[9,10]</sup>

Dietary suggestions and physical therapy are just one of Ayurveda's comprehensive approach. Anaemia treatment plans should also include stress management. The therapy regimen incorporates Ayurvedic techniques like meditation and Yoga.<sup>[11]</sup> These techniques promote a balanced and harmonious condition by reducing stress and improving general well-being. Iron deficiency anaemia therapy options in Ayurveda are intriguing, but it's important to remember that results may differ from patient to patient. A person may benefit from a well-rounded treatment plan that incorporates both conventional and Ayurvedic practices by consulting with both types of healthcare providers.<sup>[12]</sup>

Iron deficiency affects around 600 million individuals, which is almost half of the world's anaemic population. More than thirty percent of the total population is represented by this. The illness known as iron deficiency anaemia occurs when the body's iron requirements are greater than its ability to absorb iron.<sup>[13]</sup> Iron deficiency anaemia may be brought on by a loss of blood, difficulties with absorption, or the demands of the body's normal physiological processes. Schistosomiasis and hookworms are major causes of haemorrhage in the gastrointestinal system on a worldwide scale. Other causes include a number of other parasites.<sup>[14]</sup> The synthesis of haemoglobin is one of the many functions that iron does in addition to being necessary for the transit of electrons inside cells and for a wide variety of enzyme enzymatic activities. Despite the fact that it is poorly absorbed, the non-haem iron that is present in vegetables and cereals contributes more to total intake than the haem iron that is found in animal products.<sup>[15]</sup>

However, the tannin in tea inhibits iron absorption, while vitamin C-rich fruits and vegetables are beneficial to iron absorption. Because the body does not have a mechanism for iron elimination, it is essential to limit

the amount of iron that is consumed in order to maintain haemostasis.<sup>[16]</sup> This is a big reason for worry since it is one of the primary dietary causes of sickness on a worldwide scale. It is difficult for the body to absorb iron at times such as puberty and infancy because the body's need for iron increases throughout these times. An increased susceptibility to infections, heart issues, developmental delays in children, difficulty during pregnancy, and depression are just some of the numerous unfavourable effects that may result from iron deficiency anaemia.

However, there are many more potential repercussions as well. Blood tests, serum ferritin, total iron-binding capacity (TIBC), and complete blood count (CBC) are some of the available investigations that may be performed in this disease. The treatment for iron deficiency anaemia involves the administration of ferrous sulphate at the dosage of 200 milligrams three times a day for a period of three to six months in order to replace iron stores. Several individuals report experiencing dyspepsia and alterations in their bowel habits as a consequence of the gastrointestinal side effects that are caused by ferrous sulphate. It is anticipated that the majority of patients will have a favourable prognosis in the very near future. The prognosis, on the other hand, is not very encouraging since there is no therapy available for the underlying issue.<sup>[17]</sup>

The ailment that is referred to as *Pandu Roga* is the one that occurs when the most visible symptom is paleness, also known as *Panduta*. It is conceivable to link *Pandu Roga* with iron deficiency anaemia (IDA) due to the fact that *Panduta*, also known as pallor, is present throughout the body.

## CASE REPORT

A 22-year-old female patient presented to the Patanjali Ayurveda Hospital in Agra on October 29, 2023, complaining of intermittent swelling in both feet, generalized lethargy, pale skin, and the following symptoms: hair loss (50 strands/day), palpitations for the past three months, and occasional bluish bruises on the skin that heal on their own after an injury. Her menstrual cycle has been consistent. "The patient's

vitals are as follows: pulse rate: 68 beats per minute; blood pressure: 110/70 mm Hg; colour: ++; absence of icterus; weight: 45 kg; height: 150 cm; respiratory rate: AE= BE; cardiac status: S1 normal, S2 normal, no abnormal sounds; central nervous system: well conscious; and orientation: location, person, and time are all assessed successfully. She had a low haemoglobin level (8.6g/dl) on her full blood count. She reported feeling much better after using the Ayurvedic medications for a month: her swelling went away, her pallor went down, she felt more energized, her hair fell out 10 strands each day, her palpitations went away, and her hemoglobin level went up to 12.7g/dl. In this case study, we see how including Ayurvedic medications into *Pandu's* treatment plan led to significant recovery.

### Treatment Intervention

**Table 1: The patient was prescribed the following medications orally**

SN	Formulation	Dose, frequency and time	Adjuvant	Duration
1.	<i>Amalaki Rasayan.</i> <i>Navayas Lauh,</i> <i>Kasis Bhasma</i>	two times day administration (333 mg twice day)  166 mg taken twice day	With honey or lukewarm water	1 month
	<i>Swarnamakshik Bhasma</i>	83 milligrams taken twice day		
	<i>Giloy Satva</i>	divided into two daily doses of 166 mg.		
<b>* Add the ingredients and take a teaspoon twice a day without food.</b>				
2.	<i>Vidangasav</i>	(20 millilitres) of <i>Asava</i> , taken twice a day, after each meal	20ml of normal water	1 month
3.	<i>Abhralauh**</i>	take one tablet twice day with food.		1 month

### Medical Evaluation

We compared the following clinical parameters before and after the month-long treatment: If you have any of the following symptoms: pallor, weakness, weariness, anorexia, irritability, dyspnea, palpitations, or oedema, see a medical professional.

### Evaluation in the Lab

A full blood count was taken both before and after the procedure.

### Evaluation of Clinical Significance

G0 (grade point 0)- Absence of any signs or symptoms

G1 (grade point 1)- Subtle manifestation of disease.

G2 (grade point 2)- Symptoms and signs of moderate severity

G3 (grade point 3)- Extremely concerning clinical manifestation

### Blood Haemoglobin Level Grading

G0- Hemoglobin level > 11g/dL

G1- Hemoglobin level 9.5g/dL to <11g/dL

G2- Hemoglobin level 7.5g/dL to <9.5g/dL

G3- Hemoglobin level 6g/dL to <7.5g/dL

### RESULT

Clinical characteristics and laboratory data were observed both before and after therapy in order to evaluate the outcomes.

- Very good - An improvement of 75% or more
- Good - A 50% improvement or higher but less than 75%
- Fair - Enhancement of 25% or more, but less than 50%
- Poor - Less than 25% improvement or no improvement at all

**Table 2: Assessment results**

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

**Table 3: Detailed blood count reports are detailed below.**

Test	Pre (29/10/2023)	Post (10/12/2023)	Normal Range
Hb	8.6 g/dl	12.7 g/dl	12.0-17.0
WBC	6.07/ uL	5.37/ uL	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/uL	5.62/uL	3.8-5.50
HCT	29.6%	40.7%	36.0-50.0
MCV	60.2 fL	72.4 fL	83.0-110.0
MCH	17.5 pg	22.6 pg	33.0-37.0
MCHC	29.1g/dL	31.2g/dL	31.0-37.0
PLT	330/uL	259/uL	150-400

## DISCUSSION

*Pandu* is a term that refers to a pale or white appearance. The skin of those who suffer from anaemia, a disorder that is marked by a deficiency of haemoglobin or red blood cells, appears paler than the skin of those persons who have this sickness. *Pandu* is caused by a number of causes, including the inhibition of one's natural urges, excessive intake of meals that are too acidic, sour, pungent, or salty, as well as foods that are too hot, incompatible, or otherwise improper, and the overconsumption of foods that are excessively hot. It is *Manas Bhava*, which contains anger, dread, and concern, that is responsible for *Pitta* vitiation. *Manas Bhava* is transported to the body by an aggravated *Vata*. Heart palpitations, a lack of perspiration, intense weariness, skin cracks, excessive salivation, general lethargy, an urge to eat dirt, puffiness under the eyes, and a little yellowish tinge to

urine and faeces are some of the symptoms that may be experienced.<sup>[18]</sup> The condition known as *Agni Vaishmya* may be brought on by two different factors: *Nija*, which can be brought on by inadequate absorption, and *Agantuja*, which can be brought on by excessive blood loss.<sup>[19]</sup> *Vata Vridhi*, *Oja Kshya*, and *Dhatu Shaithilya* are the next steps in the process, which starts with *Agni Vaisamy* and goes forward. The inability to absorb iron is one of the key factors that contribute to iron deficiency anaemia. In accordance with the Ayurvedic concept of "cause and effect," substances that possess properties that are like to one another will enhance one another.<sup>[20]</sup> This idea proposes that *Lauha* (Iron), which is believed to be the most effective hematinic preparation, might be used to cure anaemia caused by a lack of iron in the population.

**Table 4: Formulation of drugs.**

SN	Drug	Scientific name	Name of Formulations		
			Navayas Lauha	Abralauh	Vidangasav
1.	<i>Lauh bhasma</i>	-	+	+	-
2.	<i>Pippali</i>	<i>Piper longum</i>	+	+	+
3.	<i>Maricha</i>	<i>Piper nigrum</i>	+	+	+
4.	<i>Shunthi</i>	<i>Zingiber officinale</i>	+	+	+
5.	<i>Haritaki</i>	<i>Terminalia chebula</i>	+	+	-
6.	<i>Bhibhitaki</i>	<i>Terminalia bellerica</i>	+	+	-
7.	<i>Amalki</i>	<i>Embelica officinalis</i>	+	+	+
8.	<i>Mustaka</i>	<i>Cyperus rotundus</i>	+	+	-
9.	<i>Vidanga</i>	<i>Embelia ribes</i>	+	+	+
10.	<i>Abhrak Bhasma</i>	-	-	+	-

11.	<i>Shatavari</i>	<i>Asparagus racemosus</i>	-	+	-
12.	<i>Kanchanar</i>	<i>Bauhinia variegata</i>	-	-	+
13.	<i>Lodhra</i>	<i>Symplocos racemosa</i>	-	-	+
14.	<i>Ela</i>	<i>Elettaria cardamomum</i>	-	-	+

**Amalki Rasayan** - The *Tridosahara* qualities of *Amalaki* (*Phyllanthus emblica* L.) include *Pittashamak* (pacifying *Pitta*), *Rasayana* (rejuvenative), and *Shonitsthapana*, which feed the *Dhatu*s and improve iron absorption. Thanks to its antioxidant content - which includes vitamin C, bioflavonoids, flavones, polyphenols, and carotenoids - *Amalaki* also has anti-inflammatory effects." A more effective approach to IDA therapy may be to combine iron supplementation with antioxidant vitamin supplementation.

**Swarna Makshika Bhasma** offers therapeutic uses for conditions such as *Pandu* (anaemia) and *Mandagni* (bad digestion) in addition to a powerful *Rasayana* medicine.

**Amruta** (*Tinospora cordifolia*) has potassium, ferrous (iron), calcium, copper, and vitamins B, C, and E. Iron is more bioavailable when absorbed with the aid of vitamin C. The production of red blood cells and haemoglobin is both aided by *Giloy Satva*.

**Abhralauh** is a patented Ayurvedic herb-mineral medication that boosts *Rasa* and *Raktadhatvagni*; it is very effective as *Raktavardhak* and *Balya*. When it comes to treating iron deficient anaemia, *Abhra Loha* is just as effective as ferrous sulphate.

*Pandu Roga* may be caused by worm infestations, or *Krimi*, which can be treated with *Vidangasav* and *Shodhan*. Each of the formulations is useful because it breaks the pathophysiology of *Pandu Roga*.

## CONCLUSION

We are said to have *Pandu Roga* when the *Rasvaha* and *Raktavaha Srotas* are in the *Pitta Pradhan Vyadhi*.

*Amalki Rasayan*, *Navayas Lauh*, *Kasis Bhasma*, *Swarnamakshik Bhasma*, *Giloy Satva*, *Vidangasav*, and *Abhralauh* are some of the Ayurvedic formulations that have the potential to disrupt the pathogenesis of *Pandu* due to the traits and activities that they possess. When taken in the form of *Lauha* (iron) formulations with other components, the drugs are particularly effective in boosting the patient's haemoglobin level and overall symptoms in as little as one month. This is because the treatments include additional formulations. Due to the fact that Ayurvedic formulations are both safe and efficient, they are the most effective method of treating *Pandu*, which is an iron deficient anaemia diagnosis.

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