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CASE STUDY

Ayurvedic Aspect of Iron Deficiency Anemia: A Case Report

Kinjal Rohit, Narendra Yadnik
Department of Kriya Sharira, Parul Institute of Ayurveda, Parul University, Vadodara-391760, Gujarat, India
Corresponding Author
Dr. Kinjal Rohit
Email Id: rohitkinjal1998@gmail.com

ABSTRACT
Anemia is a severe worldwide health issue that primarily affects women who are of reproductive age, but it can affect people of all ages. The most prevalent cause of iron deficiency anemia is blood loss or malabsorption. Menstruation is a major contributing factor to iron deficiency anemia, which is one of the most common types of anemia in women. Severe anemia can result from menometrorrhagia, which is defined as excessive, protracted, and irregular uterine bleeding. An examination of the worldwide anemia burden between 1990 and 2010 showed that, despite annual declines, the prevalence of iron deficiency anemia remained high, impacting about one in five women. In premenopausal women, menstruation is thought to be primarily to blame for the reduction of bodily iron reserves. Here, a unique case of a 52-year-old menopausal woman who experienced menometrorrhagia, which resulted in severe iron deficiency anemia and abnormally low hemoglobin levels. who had a history of menometrorrhagia. She had severe anemia and a record-low hemoglobin level when she first arrived. Which were well treated with Ayurvedic medication. Assessments were conducted before and after therapy to determine the signs and symptoms as well as serum ferritin, serum iron, MCHC, MCV, MCH, and hemoglobin levels. Following the treatment, there was a noticeable improvement.
***Keywords**: Hemoglobin, Anemia, Iron deficiency anemia, Critical care*

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INTRODUCTION

Anemia is a major global public health concern affecting individuals across all age groups, with a disproportionately higher prevalence among women of reproductive and perimenopausal age. Iron deficiency anemia (IDA) remains the most common type of anemia worldwide, and chronic blood loss due to menstrual disorders is a leading etiological factor in women. Menometrorrhagia—characterized by excessive, prolonged, and irregular uterine bleeding—is a significant contributor to iron depletion and may result in severe anemia if left untreated. Women experiencing menstrual blood loss exceeding 80 mL per cycle are at a markedly increased risk of developing iron deficiency and its associated systemic manifestations. Nearly 25% of women in their fourth and fifth decades of life are reported to suffer from menometrorrhagia, making it a clinically important condition requiring effective and sustainable management strategies [1–3].

In recent years, changing dietary patterns, particularly the widespread adoption of fast food and nutritionally poor diets, have further aggravated the prevalence of deficiency disorders and metabolic disturbances. From the modern medical perspective, nutritional deficiencies primarily arise due to inadequate intake, impaired absorption, or defective assimilation of essential elements, and management is largely focused on supplementation or replacement therapy. However, such approaches may not always address the underlying pathophysiology or prevent recurrence.

Ayurveda offers a holistic and individualized approach to disease management, emphasizing the correction of Agni (digestive and metabolic fire), restoration of Dhatu balance, and regulation of physiological processes rather than mere supplementation. Conditions such as menometrorrhagia and

anemia can be correlated with Raktapradara and Pandu, respectively, wherein treatment is directed toward addressing the root cause, improving tissue nourishment, and restoring systemic equilibrium.
The present case report highlights the Ayurvedic management of a premenopausal woman with menometrorrhagia leading to severe iron deficiency anemia, who declined blood transfusion and opted for Ayurvedic treatment. The case aims to evaluate the effectiveness of a holistic Ayurvedic treatment protocol in improving clinical symptoms and hematological parameters, thereby demonstrating an alternative therapeutic approach in the management of severe anemia.

CASE REPORT

The primary complaint of a 52-year-old woman who had no known prior medical history and was experiencing growing weakness and dizziness for three weeks was accompanied by a mechanical fall at home on the day of the presentation came for ayurvedic management.
Upon physical examination, she showed no symptoms (36.1°C), 89 beats per minute(bpm) on the heart rate monitor, 18 breaths per minute on the respiratory monitor, and 100% oxygen saturation on room air. She was breathing comfortably on room air and displayed no signs of shortness of breath. Her blood pressure was 100/54 mmHg with a mean arterial pressure of 69 mmHg. Her weight was 45 kg (body mass index 21.4) and her height was 148 cm. She had no neurological impairments, was completely awake, attuned to people, places, times, and situations, and could communicate in coherent, full sentences.

FAMILY HISTORY - There was no relevant family history

PAST MEDICAL HISTORY

Diagnosed as iron deficiency anemia with low levels of Hb. By modern allopathic practitioner. Had taken the modern medication of iron supplements and other drugs for two to three months for 3 times in past two years. Presently suggested for blood transfusion as the Hb level was very low, but patient refused to undergo the procedure and opted for Ayurvedic treatment.

PHYSICAL EXAMINATION:

1. General Appearance: Pale looking
2. Built: Moderate
3. Weight: 45 Kgs
4. Height: 148 cms
5. BMI: 21.4
6. Pallor: +++
7. Icterus: Absent
8. Clubbing: Present
9. Cyanosis: Absent
10. Oedema: Periorbital swelling and mild bilateral pedal oedema

PERSONAL HISTORY:

1. Appetite: Reduced
2. Bowel: Normal, once/day
3. Micturition: 4-5 times per day
4. Sleep: Sound
5. Diet: Vegetarian
6. Habits: Tea twice a day. No other addictions

VITALS:

1. Blood Pressure: 100/54 mmhg
2. Pulse: 89 bpm, Tachycardic
3. Temp: 98.4 F
4. SPO2: 98%
5. Respiratory Rate: 18 cycles/min

SYSTEMIC EXAMINATION:

1. CNS: Well oriented to place, person and time.
   Intact Higher mental functions.
   No sensory deficits.
2. CVS: S1 S2 Heard, No added sounds,
   HR: 89 bpm – Tachycardia
3. RS: b/l symmetrical air entry, no added sounds,
   RR: 18 cycles per minute – Tachypnoea
4. P/A: Soft, Non tender, No organomegaly.

Local examination: She had marked pallor with pale mucous membranes and conjunctiva. She had no palpable lymphadenopathy.
On musculoskeletal examination, her extremities were thin. She had full strength in lower and upper extremities bilaterally.
Upon collecting further history from the patient, she revealed that she has had a 2 years history of extremely painful menstrual periods and since last 25 days heavy menstrual periods: Since Initial laboratory data are sumerized. Her hemoglobin (Hgb) was critically low at 5.4 g/dL on arrival, with a low mean corpuscular volume (MCV) of 80.9 fL. Hematocrit was also critically low at 18.2. Red blood cell distribution width (RDW) was elevated to 17.6.
Vitamin B12, folate, hemolysis labs [lactate dehydrogenase (LDH), haptoglobin, bilirubin], and disseminated intravascular coagulation (DIC) labs [prothrombin time (PT), partial thromboplastin time (PTT), fibrinogen, d-dimer] were all unremarkable. Platelet count was 631,000/mm3.

ASHTVIDHA PARIKSHA (Eight types of examination)

1. NADI (pulse):78/min
2. MALA (stool): Constipation
3. MUTRA (urine): Normal
4. JIHVA (tongue): Niram
5. SHABDA (speech): Normal
6. SPARSHA (skin): Khara, Anushna
7. DRUKA (eyes): Normal
8. AKRITI (madhyam)

Clinical assessment

Medical Evaluation Before and after the two-month course of treatment, the following clinical findings were evaluated:
Pallor, Daurbalyata (weakness), Shrama (fatigue), Aruchi (anorexia), irritability, Kopana or Adhirata (dyspnoea), Hridayaspandana (palpitations), and edema are the qualities of Vaivarnata.

Laboratory Evaluation

A complete blood count was taken both before and after the treatment.

Grading of Clinical Feature

G0 (grade point zero)- No clinical feature/symptoms
G1 (grade point 1)- mild clinical feature/symptom
G2 (grade point 2)- moderate clinical feature/symptom
G3 (grade point 3)- Severe clinical trait or indication

Grading of Blood Hemoglobin Level

G0 Grading> 11g/dL hemoglobin level
G1: A hemoglobin level between 9.5 and <11 g/dL
G2: Hemoglobin level between 7.5 and 9.5 g/dL
G3: Hemoglobin levels between 6 and 7.5 g/dL

Overall Evaluation of the Outcome

Based on observations of clinical characteristics and laboratory data both before and after treatment, the outcomes were evaluated.
Excellent: Improvement of 75% or more
Positive: 50% and up, but less than 75%
Fair: 25% and above, but less than 50%
Poor: Less than 25% improvement or none at all

DISCUSSION

The causative factor of *Pandu* are- excessive intake of alkaline, sour, pungent and salty, too hot, incompatible and unsuitable food, suppression of natural urges, *Manas Bhav*- anxiety, fear, anger causes *Pitta* vitiation and is propelled to the body by aggravated *Vata*. 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, edema under the eye lids, slight yellowish color to urine and feces. *Agni vaishmya* is caused by two factors- *Nija* that can be due to improper absorption, *Agantuja* that can be due to blood loss. *Agni vaisamya* leads to *Vata vridhi* and *Oja kshya* and ultimately *Dhatu shaithilya*. Poor absorption is the main cause of iron deficiency anemia. Based on the principle of Ayurveda substances of like properties will cause increase of the same attributes. According to this principle, *Lauha* (Iron) can be used in the treatment of iron deficiency anemia, considering it to be best among haematenic preparations.

Follow up and outcome after 2 months

ASSESSMENT	BEFORE TREATMENT	AFTER TREATMENT
Clinical assessment	G2	G1
Laboratory assessment	G2	G0
Overall assessment	-	Very good

TREATMENT

Amalki rasayan

Phyllanthus emblica L., or amalki, has qualities that are known to nourish the Dhatus and improve iron absorption. These properties include Pittashamak, which is known to soothe Pitta, Rasayan, which is a rejuvenative, and Shonitsthapana. The presence of antioxidants such as vitamin C, carotenoids, flavones, bioflavonoids, and polyphenols in amalki contributes to its antioxidant qualities. A better approach to the management of IDA may be to combine iron supplementation with antioxidant vitamin supplementation.

Swarna Makshika Bhasma

Swarna Makshika Bhasma is a powerful Rasayana medicine that has also been utilized for Pandu (anemia), Mandagni (bad digestion), etc.

***Amruta* (Tinospora cordifolia)**

Vitamins B, C, and E, ferrous (iron), calcium, copper, and potassium are all present in amruta (Tinospora cordifolia). The body's bioavailability is increased and iron absorption is aided by vitamin C. Red cell and hemoglobin production are enhanced with giloy sat.

Abhralauh is a herbomineral 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 anemia.

Table 1: Treatment Chart

Sl No	Formulation	Dose	Anupana
First visit			
1	*Amalki rasayan*	1-0-1 A/F	Ushna Jala
2	*Swarna Makshika Bhasma*	1-0-1 A/F	Ushna Jala
3	*Amruta* (Tinospora cordifolia)	1-0-1 A/F	Ushna Jala
4	*Abhralauh*	1-0-1 A/F	Ushna Jala
Second visit			
1	*Amalki rasayan*	2-0-2 A/F	Ushna Jala
2	*Swarna Makshika Bhasma*	1-0-1 A/F	Ushna Jala
3	*Amruta* (Tinospora cordifolia)	1-0-1 A/F	Ushna Jala
4	*Abhralauh*	1-0-1 A/F	Ushna Jala
Third visit			
1	*Amalki rasayan*	1-0-1 A/F	Ushna Jala

Pathya (Wholesome) and Apathya (Unwholesome)

As 100m of Gud (jaggery) contain –iron-11mg

Table 2: Pathya and apathya

Pathya	Apathya
• Vegetables like Carrot, Beetroot; • Green leafy vegetables like Spinach, Fenugreek etc; • Mudga (Green Gram) • Tomato, egg, meat • Fruits: Pomegranate, Pappaya, Banana. • Milk, Ghee. • *Munakka*, Kharjur, prepare food in *Lauh patra* etc.	• Ati Ushna Teekshna Ahara (Fried/Spicy food) Tila, Kullata, Maricha • Diwaswapna (Day Sleep) • Ati Atapa Sevena (Exposure to Excessive Sunlight) • Chinta(Anxiety), Krodha(Anger) • Ativyayama (Excessive Exercise)

Table 3: Grading of Subjective Criteria

1. *Pandutha* (Pallor)	**Grade**
Absent	0
Mild	1
Moderate	2
Severe	3
2. *Akshikoota Shota* (Periorbital oedema)	
Absent	0
Mild	1
Moderate	2
Severe	3
3. *Agnimandya* (Appetite)	
Absent	0
Mild	1
Moderate	2
Severe	3
4. *Daurbalya* (Fatigue)	
Absent	0
Mild (Occasionally in normal activity)	1
Moderate (Persistent in heavy activity)	2
Severe (Persistent in normal activity)	3
5. *Shwasa* (Dyspnoea)	
Absent- No difficulty	0
Mild (Occasional on Exertion)	1
Moderate (On walking Upstairs/ Quick movments)	2
Severe (On minimal exertion/ on rest)	3
6. *Pindikodwestana* (Leg Cramps)	
Absent	0
Mild (leg cramps during night)	1
Moderate (Leg cramps during night and during exertion)	2
Severe (Leg cramps throughout the day)	3

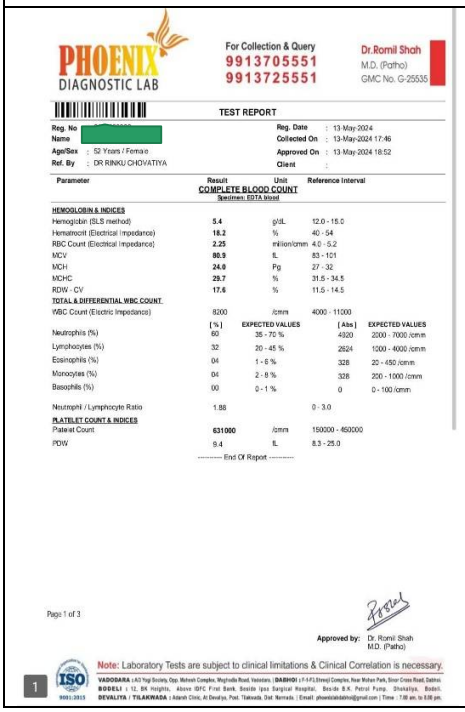
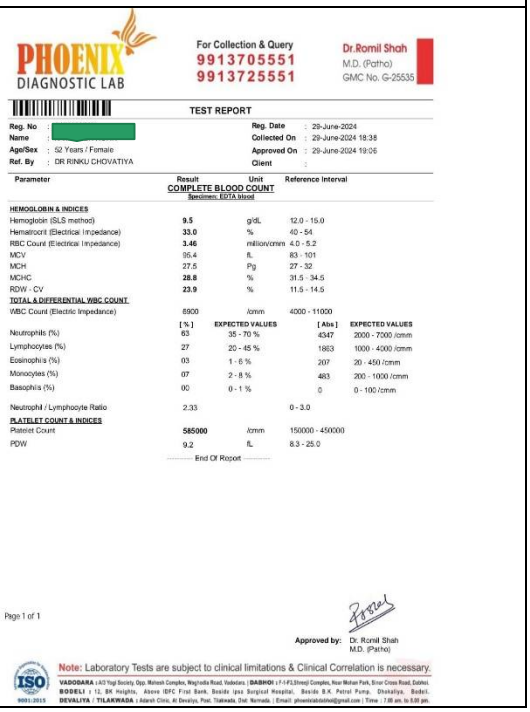
Table 4: Observation output

Sl No	**Parameters**	**First Visit 13/05/2024**	**Second Visit 20/05/2024**	**Third Visit 14/06/2024**	**Fourth Visit 29/06/2024**
Subjective Parameters					
1	*Pandutha* (Pallor)	3	3	2	1
2	*Akshikoota Shotha* (Periorbital Oedema)	3	2	1	0
3	*Agnimandya* (Appetite)	2	2	0	0
4	*Daurbalya* (Fatigue)	3	3	2	1
5	*Shwasa* (Dyspnoea)	3	2	0	0
6	*Pindikodwestana* (Cramps)	2	2	1	0
Objective Parameters					
1	Haemoglobin	5.4 gms%	5.9 gms%	7.7 gms%	9.5 gms%
2	RBC Count	2.25 million/ cum	-	-	3.46million/cu mm
3	MCV	80.9 fL	-	-	95.4 fL
4	MCH	24 Pg	-	-	27.5 Pg
5	MCHC	29.9 g/dl	-	-	28.8 g/dl
6	Serum Ferritin	37 ng/Ml	-	-	
7	Serrum Iron	50 mcg/dL	-	-	140mcg/dL

There was a marked reduction in subjective symptoms such as pallor, periorbital edema, fatigue, dyspnoea, appetite loss, and muscle cramps over successive follow-ups. By the fourth visit, most symptoms were either significantly reduced or completely absent.

Objective findings showed a progressive rise in haemoglobin levels from 5.4 g/dL to 9.5 g/dL, along with improvement in RBC count and red cell indices, indicating correction of anemia. Serum iron levels increased substantially, reflecting improved iron status.

Overall, the observations suggest that the treatment was clinically and hematologically effective in managing anemia associated with menometrorrhagia.

Before treatment	After treatment
	

Declaration of Patient 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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