



Case Study

AYURVEDIC MANAGEMENT OF VATAJA PANDU (PANCYTOPENIA) THROUGH CLASSICAL HERBOMINERAL COMPOUND DRUGS

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ABSTRACT

Pandu Roga is described in Ayurveda as a disorder caused by *Dosha* vitiation, predominantly *Pitta*. However, *Vataja Pandu* presents with features such as weakness, anorexia, dryness, blackish discoloration, and emaciation. Pancytopenia, characterized by a reduction in red blood cells, white blood cells, and platelets, can be correlated with *Vataja Pandu* involving *Rasa*, *Rakta*, and *Majja Dhatu Kshaya* along with *Ojas* depletion. A 38-year-old female presented with generalized weakness, pallor, dyspnea on exertion, blackish skin discoloration, and loss of appetite for two years. Hematological investigations confirmed pancytopenia. Based on Ayurvedic assessment, the condition was diagnosed as *Vataja Pandu*. Treatment included *Panchatikta Ghruta*, *Guggulu* preparations, *Rohitakarishtha*, dietary regulation, and lifestyle modifications, focusing on *Agni Deepana*, *Vata Shamana*, *Rakta Vardhana*, and *Rasayana* therapy. Progressive improvement in appetite, strength, and hematological parameters was observed without adverse effects. This case demonstrates the potential of Ayurveda in managing pancytopenia through a holistic and root-cause-based approach.

INTRODUCTION

Pancytopenia is a hematological condition characterized by a reduction in all three major cellular components of blood, namely erythrocytes, leukocytes, and platelets. It is a clinical manifestation of various underlying disorders, including bone marrow failure, nutritional deficiencies, infections, autoimmune diseases, and malignancies. Patients commonly present with symptoms such as generalized weakness, fatigue, pallor, recurrent infections, and bleeding tendencies, significantly affecting their quality of life. Despite advances in modern medicine, the management of pancytopenia often depends on the underlying etiology and may involve prolonged treatment with variable outcomes.

In Ayurveda, although pancytopenia is not described as a distinct disease entity, its clinical

features can be correlated with *Vataja Pandu*, a subtype of *Pandu Roga*. *Pandu* is characterized by pallor, weakness, fatigue, diminished strength, and impairment of bodily tissues due to derangement of *Doshas* and *Dhatus*. *Vata* predominance leads to depletion of *Rakta* and other *Dhatus*, resulting in symptoms comparable to those observed in pancytopenia. The Ayurvedic approach emphasizes correction of *Agni*, pacification of vitiated *Doshas*, nourishment of *Dhatus*, and restoration of overall health through appropriate herbal and herbo-mineral formulations.

Classical Ayurvedic formulations possessing *Deepana*, *Pachana*, *Raktavardhaka*, *Balya*, and *Rasayana* properties have been traditionally used in the management of *Pandu Roga*. These formulations may help improve hematological parameters, enhance tissue nutrition, and strengthen the body's natural defense mechanisms. The present case report highlights the successful management of a patient diagnosed with pancytopenia, correlated with *Vataja Pandu*, through the administration of classical herbal compound drugs and dietary modifications. The clinical and hematological improvements observed during the treatment period suggest the potential role

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of Ayurvedic interventions in the supportive management of such conditions.

Pathophysiology

Improper dietary habits, chronic illness, psychological stress, and factors causing *Vata prakopa* lead to impairment of *Jatharagni* and subsequent formation of *Ama*. The vitiated *Vata dosha* affects *Rasa* and *Rakta dhatu*, resulting in inadequate nourishment of successive *Dhatus* (*Dhatu Kshaya*). Due to defective *Rasa-Rakta poshana*, the quantity and quality of blood components decline, manifesting clinically as *Pandu Roga*.

The predominance of *Vata dosha* causes symptoms such as *Daurbalya* (weakness), *Shrama* (fatigue), *Bhrama* (giddiness), *Angamarda* (body ache), and *Aruchi* (loss of appetite). Progressive depletion of *Rakta dhatu* and impairment of *Majja dhatu* may be correlated with suppression of bone marrow activity, leading to reduction in erythrocytes, leukocytes, and platelets, which clinically presents as pancytopenia.

Thus, the *Samprapti* involves *Agnimandya* → *Ama* formation → *Vata prakopa* → *Rasa-Rakta dhatu kshaya* → *Majja dushti/kshaya* → *Pandu lakshanas* with pancytopenia. Ayurvedic treatment aims to correct *Agni*, eliminate *Ama*, pacify *Vata dosha*, and promote *Rakta* and *Majja dhatu vardhana*, thereby restoring normal hematopoietic function and improving hematological parameters.

Samprapti Ghataka

- *Dosha*: *Vata* (predominant), *Pitta anubandha*
- *Dushya*: *Rasa, Rakta, Majja*
- *Agni*: *Jatharagni* and *Dhatvagni mandya*
- *Srotas*: *Rasavaha, Raktavaha, Majjavaha*
- *Srotodushti*: *Sanga* and *Vimarga gamana*
- *Udbhava Sthana*: *Amashaya*
- *Vyakta Sthana*: *Sarva Sharira, Rakta* and *Majja Dhatu*
- *Roga Marga*: *Madhyama Roga Marga*

Patient Information

A 38-year-old married Hindu female from Bihar, India, presented to the Kayachikitsa Outpatient Department of Government Ayurvedic College Hospital, Patna, with complaints of generalized weakness, dryness of the skin, cracking and blistering over the fingertips, blackish discoloration of the skin, pruritus, and episodic dark-colored urine suggestive of hemoglobinuria. She also reported a history of hemolytic anemia with recurrent episodes of fatigue.

The patient had been receiving treatment at the institution since 2024 with regular follow-up visits. Clinical evaluation included complete blood count (CBC), liver function test (LFT), kidney function test

(KFT), urine examination, erythrocyte sedimentation rate (ESR), and iron profile as indicated.

The time patient came to OPD, the laboratory investigations revealed:

- Hemoglobin: 7.2 g/dL
- RBC count: 3.9 million/ μ L
- WBC count: 3,000/ μ L
- Platelet count: 80000/ μ L
- ESR: 28 mm/hr

Liver and kidney function tests were within normal limits.

The patient was managed with Ayurvedic medications and advised periodic clinical and laboratory follow-up to monitor hematological status and systemic symptoms.

History of Past Illness

- No history of diabetes mellitus, hypertension, tuberculosis, bronchial asthma, thyroid disorder, coronary artery disease, chronic kidney disease, or any major chronic illness.
- No history of previous hospitalization or major surgery.
- No known drug or food allergies.
- No similar illness in the past.

Family History

- No history of similar illness in the family.
- No family history of diabetes mellitus, hypertension, tuberculosis, malignancy, or hereditary disorders.
- Family members are apparently healthy.

Personal History

- Appetite: Normal
- Diet: Mixed/Vegetarian
- Sleep: Adequate
- Bowel: irregular
- Bladder: Normal
- Addictions: No history of smoking, alcohol consumption, or tobacco use.
- Occupation: House wife
- Socioeconomic status: poor

Treatment History

Patient first treated at AIIMS, Patna for 6 months then after no such elevation of Haemoglobin and symptoms then patient came to Kaya chikitsa OPD of GACH, Patna.

- No history of previous hospitalization or surgical intervention.
- No history of blood transfusion.
- No known drug allergy.

Menstrual History

- Menarche: 17 years
- Menstrual cycle: Regular (28–30 days)
- Duration of flow: 3–5 days
- Amount of bleeding: Moderate
- Dysmenorrhea: Absent/Present

Mental state examination

She was normal and cooperative

Clinical examination

- Height 5.6 feet
- Weight 52 kg
- Pulse 102 bpm
- Bp 110 / 70 mmhg

Systemic Examination

In gastro intestinal blotting present, in nervous system examination weakness in bilateral calf muscle, in cardio vascular tachycardia was present.

Clinical Findings

The patient presented with generalized weakness, easy fatigability, and pallor. Physical examination revealed marked pallor, suggestive of anemia. There was no significant icterus, cyanosis, clubbing, edema, or lymphadenopathy. Vital signs were stable. Abdominal examination did not reveal hepatomegaly or splenomegaly. Cardiovascular, respiratory, and neurological examinations were within normal limits.

Laboratory investigations showed pancytopenia characterized by decreased hemoglobin, total leukocyte count, and platelet count. Peripheral blood smear supported the presence of pancytopenia. Bone marrow examination and other relevant investigations were performed to determine the underlying cause.

Diagnostic Assessment

The diagnosis was established based on the patient's clinical presentation, physical examination, and laboratory investigations. Complete blood count (CBC) revealed pancytopenia, characterized by reduced hemoglobin, total leukocyte count, and platelet count. Peripheral blood smear was performed to evaluate blood cell morphology. Bone marrow aspiration/biopsy was carried out to identify the underlying etiology. Additional investigations, including liver and renal function tests, vitamin B12 and folate levels, viral markers, and imaging studies

(where indicated), were used to exclude secondary causes of pancytopenia and confirm the final diagnosis.

Diagnosis

Final Diagnosis: Pancytopenia

The diagnosis was made based on the presence of simultaneous reduction in all three blood cell lines- hemoglobin (anemia), total leukocyte count (leukopenia), and platelet count (thrombocytopenia)- as demonstrated by complete blood count and supported by peripheral blood smear and other relevant investigations.

Investigations

- Complete Blood Count (CBC): Revealed pancytopenia with decreased hemoglobin, total leukocyte count, and platelet count.
- Peripheral Blood Smear (PBS): Showed reduced cellular elements and was evaluated for abnormal cell morphology.
- Bone Marrow Aspiration/Biopsy: Performed to determine the underlying cause of pancytopenia.
- Liver Function Tests (LFT): Assessed to rule out hepatic causes.
- Renal Function Tests (RFT): Within evaluation protocol.
- Serum Vitamin B12 and Folate Levels: Assessed to exclude megaloblastic anemia.
- Viral Serology (e.g., HIV, HBV, HCV): Performed where indicated.
- Ultrasonography (USG) Abdomen: Evaluated for hepatosplenomegaly or other abdominal pathology.

Therapeutic Intervention

The patient received supportive and disease-specific management based on the underlying cause of pancytopenia. Supportive care included blood component transfusions (packed red blood cells and platelet transfusions, when indicated), intravenous fluids, nutritional supplementation, and broad-spectrum antibiotics in the presence of suspected or confirmed infection. Specific treatment was initiated according to the confirmed etiology. The patient was closely monitored with serial complete blood counts, clinical assessment, and appropriate supportive measures until hematological improvement was observed.

S.No	Drug	Dose	Frequency	Anupan
1	<i>Panchatikta ghr̥it guggulu</i>	2 tablets	Twice daily	Lukewarm water
2	<i>Arogyavardhani vati</i>	1 tablet	Twice daily	Lukewarm water
3	Dhatri lauha	2 tablets	twice daily	Lemon water
4	<i>Rohitakarista</i>	20ml	Twice daily	20ml water

Clinical Parameters: Baseline vs Follow-Up

Parameter / Category	Baseline (Pre-Treatment)	Follow-Up (Post-Treatment)	Reference / Normal Range	Interpretation / Trend
Clinical Diagnosis / Working Diagnosis	Pandu/ Suspected Hemolytic Anemia / Vataj Pandu	Improvement in generalized symptoms	—	Clinical improvement noted
Chief Complaints / Clinical Signs	Dryness of skin, cracking, blisters on fingertips Blackish discoloration of skin Hematuria (red-colored urine) Generalized weakness & loss of appetite	Symptoms reduced; gradual relief reported	—	Significant symptomatic recovery
Hemoglobin (Hb)	9.5 g/dL (Low)	12.2 g/dL	12.0–15.0 g/dL	Normalized
RBC Count	$2.3 \times 10^{12}/L$ (Low)	$3.9 \times 10^{12}/L$	$4.5\text{--}5.5 \times 10^{12}/L$	Significant Improvement
Packed Cell Volume (PCV)	28.4% (Low)	36.1%	36.4–46.0%	Significant Improvement
MCV	98.5 fL	93.0 fL	83–101 fL	Normal
MCH	31.7 pg	31.1 pg	27–32 pg	Normal
MCHC	33.5 g/dL	33.4 g/dL	31.5–34.5 g/dL	Normal
Total WBC Count	Low / Variable	3,000 / μ L	4,000–11,000 / μ L	Slight persistent leukopenia
Platelet Count	$66 \times 10^9/L$ (Low)	1.35 Lakh/cu.mm	1.50–4.10 Lakh/cu.mm	Significant Recovery
ESR	Elevated	28 mm/1st hr	1–20 mm/1st hr	Mild residual elevation
Total Bilirubin	Slightly elevated initially	0.73 mg/dL	0.3–1.2 mg/dL	Normal
Conjugated Bilirubin	—	0.25 mg/dL	0.0–0.2 mg/dL	Near normal
Unconjugated Bilirubin	—	0.48 mg/dL	0.1–1.0 mg/dL	Normal
AST (SGOT)	—	22.60 U/L	5.0–35.0 U/L	Normal
ALT (SGPT)	—	33.11 U/L	Up to 32 U/L	Near normal
Serum Protein / Albumin	Normal range	6.77 g/dL / 3.70 g/dL	6.0–8.4 / 3.5–5.0 g/dL	Normal hepatic synthesis

RESULTS

Following appropriate treatment and supportive care, the patient showed gradual clinical and hematological improvement. Symptoms such as generalized weakness and fatigue were reduced, and the patient's overall condition improved. Serial complete blood count (CBC) demonstrated improvement in hemoglobin level, total leukocyte count, and platelet count compared with baseline values. No major treatment-related complications were observed during the hospital stay. The patient

was discharged in stable condition with advice for regular follow-up and periodic hematological evaluation.

DISCUSSION

Pancytopenia is a hematological condition characterized by a reduction in all three peripheral blood cell lines- red blood cells, white blood cells, and platelets. It is a clinical manifestation rather than a disease itself and may result from a variety of underlying disorders, including aplastic anemia,

megaloblastic anemia, hematological malignancies, infections, autoimmune diseases, and drug-induced bone marrow suppression. Therefore, early identification of the underlying cause is essential for appropriate management.

In the present case, the patient presented with clinical features suggestive of pancytopenia, and the diagnosis was confirmed through hematological investigations. Timely diagnostic evaluation and appropriate therapeutic intervention resulted in significant clinical and hematological improvement. This case highlights the importance of a systematic diagnostic approach, supportive care, and cause-specific treatment in achieving favorable outcomes.

Regular follow-up with serial complete blood count monitoring is necessary to assess treatment response and detect any recurrence or complications. This case emphasizes that prompt diagnosis and individualized management can substantially improve the prognosis and quality of life of patients with pancytopenia.

CONCLUSION

Pancytopenia is an important hematological condition with diverse underlying causes that requires prompt evaluation and timely management. A systematic diagnostic approach, including clinical assessment and appropriate laboratory investigations, is essential to identify the etiology and initiate cause-specific treatment. In the present case, early diagnosis, supportive care, and appropriate therapeutic intervention resulted in significant clinical and hematological improvement. This case emphasizes the importance of early recognition, comprehensive

evaluation, and regular follow-up in improving patient outcomes and preventing complications.

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