

PANDU: A SHORT REVIEW ARTICLE**Dr. Nishit Thakrar^{1*} and Dr. Rahul Khali²**^{1,2}PG Scholar Swasthvritta Department Uttranchal Ayurvedic College, Dehradun.Article Received on
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ABSTRACT

In Ayurveda, Pandu Roga is recognized as a distinct disease, with its own specific Nidana, Purvarupa, Rupa, Sampoorapti, and Chikitsa. This disease, Pandu, is characterized by a noticeable pallor of the body, which closely resembles "Anaemia" in modern medical science. It results from a reduction in the number of red blood cells (RBCs) per cubic millimeter of blood and a decrease in hemoglobin (Hb) levels, leading to pallor and other associated symptoms. The significance of discussing Pandu Roga is highlighted by its widespread impact. It is one of the most common nutritional disorders globally, particularly in countries like India, where socio-economic challenges, illiteracy, and malnutrition are prevalent among large segments of the population. Pandu affects both physical and mental health, especially in children, impairing school performance and increasing vulnerability to infections. Moreover, infants born to anemic mothers tend to have low

iron reserves and are more likely to develop anaemia later in life, with its negative consequences. The term "Anaemia," derived from Greek, means "a lack of blood." In reality, it refers to a deficiency in hemoglobin, which exists in various degrees. Anaemia is the most prevalent and widespread nutritional disorder globally, affecting a significant number of children and women in developing countries. It is also notably common in industrialized nations. The statistics are staggering, with over 2 billion people—approximately 30% of the global population—affected by iron-deficiency anaemia, particularly in resource-poor areas. Anaemia can arise from a variety of causes, such as nutritional deficiencies, acute or chronic blood loss due to trauma or diseases, the destruction of red blood cells caused by metabolic or immunological disorders or toxins, bone marrow diseases, systemic conditions like infections and cancers, kidney failure (since the kidneys produce erythropoietin, a hormone that stimulates red blood cell production in the bone marrow), and genetic abnormalities in the

formation of hemoglobin, such as Thalassemia and sickle cell disease. This discussion will primarily focus on the nutritional aspects of anaemia, as public awareness in this area can aid in its prevention and treatment.

A World Health Organization survey conducted in Asia revealed that around 10% of men, over 20% of women (with more than 40% during pregnancy), more than 50% of children of all ages, and 92% of children under two years old suffer from anaemia. In India, 20-40% of the population, across all ages and genders, is affected by iron deficiency and nutritional anaemia. Due to its widespread impact, iron deficiency anaemia (IDA) is considered a global health issue.

INTRODUCTION

Pandu is a common disease seen in both outpatient (OPD) and inpatient (IPD) settings. Observations indicate that nutritional deficiencies are the primary cause of this condition. Poor dietary habits lead to the formation of Aam, which causes Agnimandya and ultimately results in the production of Aamyukta Aahar Rasa. This impairs the production of Rasa Dhatu, which is essential for the formation of other bodily tissues. Consequently, when Rasa Dhatu formation is disturbed, the other tissues (Dhatus) and their associated Upadhatu are also affected, as per Ayurvedic principles like Kshirdadhi, Khalekapot, and Kedarkulya Nyaya.

Panduroga is discussed in Ayurvedic texts with its etiopathogenesis and treatment. According to Ayurveda, Pandu Roga is a disorder caused by the imbalance of Rasa Pradoshaj and Rakta Dhatu Kshay. The key symptoms of Pandu include Panduta, Daurbalya, Hridspandan, and Akshikuta Shoth, which are considered cardinal features of the disease. These symptoms highlight the importance of researching Rasavaha Strotus and their disturbance in managing Pandu disease. In the pathogenesis of Pandu, Sadhak Pitta is considered a primary factor.

The prevalence of anaemia in India is high due to low dietary intake, insufficient iron availability, and chronic blood loss caused by conditions like hookworm infestation and malaria. A significant portion of the population, especially those from lower socioeconomic backgrounds, suffers from poor dietary habits, malnutrition, and illiteracy. Many individuals lack time to focus on proper nutrition, opting for fast and fried foods, which further exacerbates nutritional deficiencies and leads to anaemia.

In Ayurveda, Pandu can be symptomatically linked to anaemia. Detailed descriptions of Pandu Roga can be found in almost all Ayurvedic texts. These imbalances manifest through the agency of the Doshas, Dhatus, and Malas in the body.

In Ayurveda, Pandu is associated with the Raktavaha Strotas and Rasavaha Strotas. Rakta is considered vital for sustaining life, nourishment, and the maintenance of bodily functions. The pathogenesis of how these factors contribute to Pandu is explained through the concept of Samprapti, where the vitiation of the three doshas is identified as the root cause.

NIDANA

“Pandu” is word derived from the Dhatu “Padi Gatou” means Gati (transformation). The word “Padi Gatou” signifies the formation of Rasa, Rakta, and other Dhatus. Any disturbance, in the Dhatu Nirman process results into Pandu Roga. From Chikitsa point of view, Nidana has prime importance, as nidana Parivarjana has a significant role in treatment part. The Nidana of Pandu Roga is divided into following types: Aharaja, Nidana, Viharaja Nidana Mansika Nidana Chikitsa, apacharaja Nidana Nidanarthakara Roga.

AHARAJA NIDANA: Charaka has mentioned that Apatarpana and Santarpana both can be the cause for Pandu.

According to Charaka: 5 a) Ati Kshara, Amla, Lavana, Kashaya Rasa Sevan : Ati sevana of kshara and Amla rasa may cause irritation to gastric mucosa, which may lead to hemolysis, and disturbed metabolism of various tissues. Long term use of Amla Rasa can cause Mamsa Vidaha, which can cause Dhatu Shithilata. Likewise, Lavana Rasa does the same, it vitiates the Rakta.

According to Acharya Sushruta, excessive consumption of Amla and Lavana Rasa produces Dhatushithilata and vaivarnata. b) Viruddha – ahara and Asatmya Bhojana: Frequent use of Viruddha Ahara and Asatmya Bhojana leads to Sneha Guna Kshaya of Dhatu, which produces Ama and disturbs the metabolism. c) Nishpav, Masha, Pinyaka, Tila Taila Sevana: Excessive intake of above Nidana Vata, Pitta Prakopa causing Agnimandya which leads to Rasavaha and Raktavaha Srotodushti ultimately leading to Pandu.

VIHARAJ NIDANA: a. Diwaswapa: To sleep during daytime or immediately after food leads to Kapha Sanchaya, which hampers the Dhatu Poshana Kriya by Srotorodha and in turn causes Pandu Roga.

- b. Ati-vyayama: Dhatukshaya is seen due to Ati-vyayama. Improper diet and dietary habits may accompany to it, which ultimately results in Oja-Kshaya as mentioned in Charaka (Ch.Chi.16/5)
- c. Ati-Maithuna: Excessive sexual activity causes Shwasa, Shula and Karshyata that finally results into Pandu Roga.
- d. Vegadharana: Due to Dharana of Adharaneeya Vega, especially Chardi Vega, it leads to Srotovarodha finally resulting into Pandu.

MANASIKA NIDANA: Majority of the population has low or middle socio- economic status. As a result, common Mansika Hetus like Chinta, Shoka, Krodha, Bhaya described by Acharya Charak, become their part of life which badly affects our digestive system.

CHIKITSA APACHARAJA NIDANA: Sneha Vibhram, Sneha Atiyoga, Amaj Atisara Sangraha, Dushta Rakta Nigrah in Raktarsha and Vega Vidharan in Vamana Karma can be the Chikitsa Apacharaja Nidana.

NIDANAARTHAKARA ROGA: There are some diseases, which are having co-relation with Pandu roga as a symptom or as an Upadrava. All these factors can be the cause of Pandu. These Hetu directly affects the Rakta Dhatu, as a result Kshaya of Rakta Dhatu occurs and Pandu is produced.

POORVA ROOPA

Prodromal symptoms, or Poorvaroopa, are the early signs that develop before the actual onset of a disease. They provide important clues about the impending illness. These symptoms arise during the stage of Sthana Samshraya, when the vitiated Doshas begin to accumulate in specific locations. Poorvaroopa offers valuable information about the upcoming disease, and if addressed during this phase, it can help prevent or reduce the severity of the illness.

In some cases, Poorvaroopa may persist even after the disease has fully developed, becoming part of the disease's primary symptoms (Roopa), while in other cases, it may disappear entirely. Occasionally, Poorvaroopa can be contradictory to the actual symptoms of the disease. For example, Vibandha (constipation) may occur before Atisara (diarrhea) sets in.

Table No. 1: Poorva Rupa of Pandu.

Sl. No	Lakshana	C.S.	S.S.	A.H.	A.S.	M.N.	B.P.	H.S.	Y.R.	G.N.
1	Hrudaya	+	+	+	-	-	-	-	-	-
2	Roukshya	+	+	-	-	-	-	-	-	-
3	Swedabhava	+	-	-	-	-	-	-	-	-
4	Shrama	+	-	-	-	-	-	-	-	-
5	Twak Sphotana	+	+	-	-	-	-	-	-	-
6	Shteevana	+	+	-	-	-	-	-	-	-
7	Gatra Sada	+	+	-	-	-	-	-	-	-
8	Mrudbhakshana	+	+	+	+	+	+	-	-	-
9	Prekshana Koota	+	+	+	+	+	+	-	-	-
10	Avipaka	+	+	+	+	-	-	-	-	-
11	Vitpeetata	+	+	+	+	-	-	-	-	-
12	Mootra Peetata	+	+	-	-	-	-	-	-	-
13	Aruchi	-	-	+	-	-	-	-	-	-
14	Alpa Vahni	-	-	+	-	-	-	-	-	-
15	Sada	-	-	+	-	-	-	-	-	-
16	Pipasa	-	-	-	-	-	-	-	-	-
17	Hrullasa	-	-	-	-	-	-	-	-	-
18	Urodaha	-	-	-	-	-	-	-	-	-
19	Anga Gourava	-	-	-	-	-	-	-	-	-
20	Rakta Lochana	-	-	-	-	-	-	-	-	-
21	Shareera Pandutwa	-	-	+	-	-	-	-	-	-

Roopa

Definition and Importance: Vyakta Purvaroopa transitions into Roopa, where the symptoms of a disease become fully evident. The manifestation of Roopa is crucial for diagnosing the disease. The prognosis (Sadhya-Asadhyatva) of a condition depends on the symptoms presented. Roopa emerges during the Vyaktavastha, the fifth stage (Kriyakala) of disease progression.

Classification of Roopa

Roopa is categorized into three types:

1. Pratyatma Lakshana – The hallmark symptom specific to a disease.
 - In Pandu Roga, the primary Pratyatma Lakshana is Panduta/Pandubhava.
2. Samanya Lakshana – General symptoms observed in the disease.
 - These include: Panduta, Dourbalya, Karnakshweda, Gatripada, Alparaktata, Hair Thinning (Kshinalomata), Shunakshikuta Shotha, Sthivana, Hrudrava, Bhrama, Gaurava, Kasa), Aruchi, Shwasa, Harita, Hataprabhatwa, Alpavak, Oja Guna Kshaya, and Pindikodweshtan.
3. Vishista Lakshana – Specific symptoms based on dosha involvement.

Types of Pandu Based on Dosha Predominance

1. Vataja Pandu

- Symptoms: Reddish or dark discoloration (Aruna/Krishna Panduta) affecting skin, eyes, nails, urine, and stool; Rukshata, Angamarda, Kampa, Toda, Shirashula, Grathita Mala/Shushka Mala, Asyavairasya, Balakshya, Anaha, Shotha, and Bhrama.

2. Pittaja Pandu

- Symptoms: Yellowish discoloration (Pitata) affecting skin, nails, eyes, urine, and stool, Haritabhata, jwara, Trushna, Chhardi, Murccha, Sheeta Kamita, Ushna Anupashayata, and Vidaha.

3. Kaphaja Pandu

- Symptoms: Gauravta, Chardi, Praseka, Lomaharsha, Sada, Murccha, Bhrama, Klama, Shwasa, Kasa, Aruchi, Alasya, and Akshi Varcha.

4. Tridoshaja Pandu:

- This type occurs when all three doshas—Vata, Pitta, and Kapha—are imbalanced due to improper diet and lifestyle, leading to a combination of symptoms from all three types of Pandu.

5. Mrud Bhakshanjanya Pandu (Clay-Induced Anemia)

- This type results from excessive consumption of soil (Mrittika), which disturbs different doshas based on its taste:
 - Madhura Rasa – Aggravates Kapha.
 - Lavana Rasa – Aggravates Pitta.
 - Kasaya Rasa – Aggravates Vata.
- Symptoms: Agnimandya, shotha, Raukshyata, Dhatu Durbalata, and (Kshaya of Teja, Bala, Oja, Virya, Krimi).

This classification helps in understanding the disease's nature and selecting the appropriate treatment.

Samprapti

The principle of treatment in Ayurveda states that “Samprapti Vighatanam Chikitsa”, meaning breaking the disease process (Samprapti) is the key to treatment (Sampraptibhanga). Therefore, understanding the Samprapti of a disease is of utmost importance in its management, as emphasized by Acharya Charaka.

Types of Samprapti

Samprapti is categorized into

1. Samanya Samprapti
2. Vishishta Samprapti

Samanya Samprapti

As per Acharya Charaka

- Causative Factors (Nidana):
 - Unwholesome diet (Mithya Ahara), improper lifestyle (Vihara), and psychological factors (Mansika Bhavas) lead to the aggravation of all three doshas, with Pitta being predominant.
 - This results in an increase in the Snigdhata (unctuous nature) of Pitta and its impairment in terms of quantity (Dravyatah), quality (Gunatah), and function (Karmatah).
 - The aggravated Pitta, assisted by Vata, displaces Sadhaka Pitta from the heart and spreads it throughout the body via the Dasha Dhamanis (ten great vessels), where it localizes between the skin (Twak) and muscle tissue (Mamsa).
 - This sthana samsraya (lodgment of doshas in tissues) leads to skin discoloration, manifesting as:
 - Pallor (Panduta) in Kaphaja Pandu
 - Yellowish tint (Haridra, Harita Vaivarna) in Pittaja Pandu
 - Dark or dusky complexion (Karshnyata) in Vataja Pandu
- Tissue Damage (Dhatu Shaithilya):
 - The disturbed doshas weaken the dhatus, leading to a loss of:
 - Complexion (Varna Kshaya)
 - Strength (Bala Kshaya)
 - Unctuousness (Sneha Kshaya)
 - Vitality (Oja Kshaya)
 - This results in fatigue (Daurbalyata), dryness (Nissarata), reduced blood content (Alparaktata), decreased fat tissue (Alpamedaskata), and sensory weakness (Shithilendriyata), marking the disease's progression to a severe stage (Gambhira Avastha).

As per Acharya Vagbhata

- The aggravated doshas, primarily Pitta, get directed by Vata towards the heart.

- The excessive Vata forcefully propels these doshas through the Dasha Dhamanis, distributing them across the body.
- During circulation, the Kapha, skin (Twaka), blood (Rakta), and muscle (Mamsa) become imbalanced and accumulate between the Twak and Mamsa, leading to skin discoloration.
- The predominant pale discoloration (Pandu varnata) defines the disease as Pandu Roga.

Vishishta Samprapti

1. Vataja Pandu Samprapti

- Although Pandu Roga is a Pitta-dominant disease, Vata dosha significantly contributes to its progression.
- Consumption of Vata-aggravating foods and lifestyle leads to the vitiation of both Vata and Pitta, causing impairment of Rasa and Rakta Dhatus.
- Vyan Vayu plays a key role in the spread of the disease, leading to symptoms such as:
 - Kampa,
 - Gatra Shoola,
 - Angasada,
 - Twaka Parushya,
 - Rukshata

2. Pittaja Pandu Samprapti

- In individuals with a Pitta-dominant constitution, continuous exposure to Pitta-aggravating diet and lifestyle leads to Pitta Dushti, making it a major cause of Pittaja Pandu.
- Since Pitta is responsible for skin complexion, its aggravation disturbs Rakta Dosha, leading to dull skin tone (Panduta).

3. Kaphaja Pandu Samprapti

- Though both Kapha and Pitta are involved, Kapha plays a major role in Kaphaja Pandu.
- Overconsumption of heavy, oily, and nourishing foods (Santarpanotha Hetu) increases Kapha and weakens dJatharagni, resulting in:
 - Ama formation,
 - Impaired digestion and metabolism,
 - Production of abnormal Rasa Dhatu, leading to deficient Rakta Dhatu.
- The aggravated Kapha causes:

- Gauravta,
- Alasya,
- Nidradhikya,
- Aruchi,
- Shwasa,
- Panduta.

4. Tridoshaja Pandu Samprapti

- Improper diet and lifestyle aggravate all three doshas (Vata, Pitta, and Kapha) simultaneously, leading to Tridoshaja Pandu (Sannipataja Pandu).
- It results in severe depletion of strength (Bala Kshaya), complexion (Varna Kshaya), unctuousness (Sneha Kshaya), and blood volume (Alparaktata).
- This type of Pandu is difficult to cure (Asadhyatva).

5. Mrud Bhakshanjanya Pandu Samprapti (Clay-Induced Anemia)

- Habitual consumption of soil (Mruttika Bhakshana) leads to the aggravation of one of the three doshas, depending on the taste of the soil:
 - Kashaya Rasa → Aggravates Vata
 - Lavana Rasa → Aggravates Pitta
 - Madhura Rasa → Aggravates Kapha
- Due to its dry and rough nature (Ruksha Guna), soil consumption causes Rukshata of Rasa Dhatu.
- As soil is indigestible, it results in blockage of body channels (Srotorodha), disturbing Dhatu formation.
- This leads to progressive depletion of Rasa-Rakta-Oja Kshaya, Twaka Vaivarnata.

The samprapti of Pandu Roga is a complex process primarily involving Pitta, with contributions from Vata and Kapha. Understanding the Nidana, Dosha involvement, and Dhatu Dushti is essential for determining the appropriate treatment approach.

Management and Treatment of Pandu Roga (Anemia in Ayurveda)

The treatment of Pandu Roga is primarily based on Yuktivyapashraya Chikitsa, which includes:

1. Nidana Parivarjana (Avoidance of Causative Factors)
2. Snehana Chikitsa (Oleation Therapy)

3. Shodhana Chikitsa (Purification Therapy)
4. Shamana Chikitsa (Palliative Therapy).

Treatment According to Acharya Charaka

- In treatable cases, Vamana can be administered using unctuous and strong medicines.
- Virechana should be performed using mild but effective purgatives.
- After proper Samyaka Shuddhi, both Pandu and Kamla patients must follow a strict diet regimen (Pathya), which includes:
 - Grains: Rice (Shali), Barley (Yava), Wheat (Godhuma)
 - Legumes: Soups (Yusha) of Green gram (Mudga), Pigeon pea (Adhaki), and Lentils (Masura)
 - Meat broth: Derived from wild animals (Jangala Mamsa Rasa)
- Based on the predominant dosha, Shamana Aushadhi are administered.
- For preventing recurrence (Apunarbhava) and long-term management (Shamanartha), medicated ghee (Snehana) is recommended, such as:
 - Panchgavya Ghrita
 - Maha Tiktaka Ghrita
 - Kalyanaka Ghrita.

Single-Herb and Compound Formulations

1. Herbal Medicines

- Haritaki, Haridra, Draksha, Yashtimadhu, Shunthi, Pippali.

2. Bhasma

- Loha Bhasma, Mandura Bhasma, Abhraka Bhasma, Swarna Makshika Bhasma, Kaseesa Bhasma, Tamra Bhasma.

3. Herbo-Mineral Compounds

- Navayas Churna, Haritakyadi Churna, Guda Haritaki Churna, Mandura Vataka
- Yograja Guggulu, Shivagutika, Dhatriलोha, Punarnava Mandura, Mandura Vataka.

4. Kwatha

- Punarnavadi Kwatha, Phaltrikadi Kwatha, Darvyadi Kwatha.

5. Asava & Arishta

- Gudarishtha, Dhatryarishtha, Bijakarishtha.

6. Leha

- Darvyadi Avaleha, Dhatryadi Avaleha.

Discussion on the Causative Factors of Pandu Roga

- The Nidana of Pandu Roga are extensively mentioned in classical texts.
- According to Acharya Sushruta, vitiation of Rakta (blood) is caused by:
 - Daytime sleep (Diwasvapa)
 - Incompatible diet (Viruddha Bhojana)
 - Emotional disturbances like anger (Krodha)
- Additional causes include:
 - Anger (Krodha), Grief (Shoka), Fear (Bhaya), Indigestion (Vidagdha Anna Sevana), Excessive sexual activity (Ati Maithuna), and use of Sesame oil (Tila Taila) and its residue (Pinyaka), leading to Pitta aggravation.
 - Excessive physical exertion (Ativyayama), night awakening (Ratrijagarana), lack of sleep (Nidranasha), excessive sexual indulgence (Ativyavaya), and long-distance travel (Ati Adhvagamana) aggravate Vata Dosha.
 - Acharya Charaka states that Pandu Roga can also develop due to suppression of vomiting (Chhardi Vegavarodha), consumption of incompatible foods (Viruddha Anna Sevana), and excessive intake of sour (Ati Amla) and salty (Ati Lavana) foods.
 - Psychological stressors like excessive worry (Chinta) and fear (Bhaya) impair digestion, leading to improper nutrient absorption.

Pathogenesis of Pandu Roga

- Improper digestion leads to poor Rasa Dhatu formation, affecting subsequent Dhatus (Rakta, Mamsa, etc.), resulting in Pandu Roga.
- The vitiation of digestive fire (Agni Dushti) leads to Ama accumulation, which blocks nutrient-carrying channels (Dhatuvaha Srotas).
- This disruption in tissue nourishment (Dhatuposhan Krama) ultimately leads to Pandu Roga, mainly due to Pitta Dosha aggravation, which then affects Rakta Dhatu, causing pallor and weakness.

CONCLUSION

- Nidana Panchaka plays a crucial role in understanding the disease progression and prognosis.
- Most of the causative factors are Pitta- and Rakta-aggravating, leading to weakened digestion (Mandagni) and dysfunction of the Rasavaha Srotas
- This results in insufficient production of nutrients from Rasa Dhatu, causing Rakta Kshaya (deficiency of blood) and ultimately leading to Pandu Roga.
- The main treatment strategy focuses on breaking the disease process (Samprapti Vighatana) through various Ayurvedic formulations available in multiple forms like powders (Churna), decoctions (Kwatha), tablets (Vati), fermented preparations (Asava & Arishta), and medicated pastes (Leha).
- These Ayurvedic remedies are considered safe and effective in managing Pandu Roga.

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