

A REVIEW ARTICLE ON *PANDU ROGA* W.S.R ANEMIAReshmi Raghuthaman¹, K.V Pradeep²

¹ Final Year PG Scholar, Department of Kayachikitsa, Sree Narayana Institute of Ayurvedic Studies and Research Hospital, Puthoor, Kollam, Kerala, India, 691507

² Professor and HOD, Department of Kayachikitsa, Sree Narayana Institute of Ayurvedic Studies and Research Hospital, Puthoor, Kollam, Kerala, India, 691507

Corresponding Author: reshmi1886@gmail.com<https://doi.org/10.46607/iamj1812112024>

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ABSTRACT

Pandu Roga is a disease characterised by the whiteness of the body. It is described in nearly all classical texts of Ayurveda as a distinct disease with its pathogenesis and treatments. Due to the resemblance in signs and symptoms, *Pandu Roga* can be correlated with anemia in modern medical science. Anemia is a condition marked by a deficiency in Red Blood Cells or Hemoglobin, resulting in reduced oxygen transport and symptoms like fatigue and pallor. It is one of the most prevalent diseases, affecting over one-third of the world's population. The alarming global rise in *Pandu Roga* presents significant challenges to developing and developed countries' health and socio-economic development. To diagnose and treat *Pandu Roga* effectively, a physician needs comprehensive knowledge of ancient *Ayurvedic* texts. This article provides insights into the *Ayurvedic* understanding of *Pandu Roga*.

Keywords: *Pandu Roga*, Anemia, Pallor

INTRODUCTION

According to *Ayurveda*, *Swasthya* is a complete well-being attained through balanced *doshas*, proper func-

tioning of *Agni*, equilibrium of *Dhatus* and *Malas*, and intact *Atma*, *Indriya*, and *Manas*¹. An imbalance

in these factors will eventually lead to disease. Malnutrition caused by inadequate dietary intake or lack of a balanced diet and the rapid expansion of the global population have contributed to the emergence of various diseases, and *Pandu Roga* is one among them. Almost all *Ayurvedic Samhitas* provide a detailed explanation of *Pandu Roga*. It is a *Pittapradhana Vyadhi* with *Pandutva* as a cardinal symptom of the disease. *Acharya Caraka* has described *Pandu Roga* as a *Rasapradoshaja Vikara*². *Pandu Rogi* experiences *Rakta*, *Bala*, *Varna*, *Sneha*, *Meda* and *Oja kshaya*, making the individual *Nihsara* and *Shithilendriya*. Anemia is defined as a decreased red cell count or haemoglobin content of blood³. When RBCs or haemoglobin are inadequate, the body's ability to transport oxygen to cells and organs becomes impaired.

Rationale of the study

The World Health Organization (WHO) recognises Anemia as a significant global health issue affecting over one-third of the world's population. In India, anemia rates among women and children exceed the global averages by 20% and 15%, respectively. This highlights India's significant impact on the worldwide burden of Anemia, mainly driven by its large population size. Anemia impacts physical health and influences cognitive development, productivity, and broader economic outcomes. *Rakta* and *Pitta* are homogenous, and the aggravation of *Pitta* should usually increase *Rakta*. However, in *Pandu Roga*, *Pitta*'s aggravation diminishes the production of *Raktaposhakasara bhaga* by reducing the *Raktaposhaka Rasa*⁴. *Rakta* helps to maintain a healthy life by promoting *Bala*, *Varna*, *Sukha*, and *Ayus* in individuals⁵. Thus, *Pandu Roga* remains highly relevant in modern times due to sedentary lifestyles and unhealthy dietary habits. If not addressed promptly, it significantly impacts quality of life.

AIM: To review the concept of *Pandu Roga* from different *Ayurvedic* literature.

MATERIALS AND METHODS

Classical *Ayurvedic* texts, such as the *Caraka Samhita*, *Susruta Samhita*, and *Ashtanga Hridaya*, and other relevant databases were analysed to gain a

deeper understanding of the aetiology, pathogenesis, and clinical features of *Pandu Roga*.

REVIEW OF LITERATURE

VYUTPATTI OF PANDU

The term "*Pandu*" originates from the *Dhatu* '*Padi-Nasane*', with the addition of '*Ku*' *Pratyaya* and further elaboration using '*Ni*', which means loss. Here, it refers to the loss of the body's natural colour.

NIRUKTI

According to *Vachaspatyam*, *Pandu* resembles the whitish yellow colour of pollen grains from the *Ketaki* flower⁶.

According to *Susruta*, *Pandu Roga* is characterised by its predominant pale or yellowish white colour, *Pandubhava*, across all its types⁷. Because of this characteristic, the disease is named *Pandu*.

NIDANA⁸

Pandu Roga is primarily characterised by *Pitta* dominance. According to various classical texts, the *Nidana* of *Pandu Roga* can be broadly categorised into :

- (i) *Aharaja Nidana*
- (ii) *Viharaja Nidana*
- (iii) *Nidanarthakara Roga*

Aharaja Nidana

Ahara is essential for adequately forming and sustaining the body's *Dhatu*s. When it is deficient in quality or quantity or excessively endowed with qualities such as *Amla*, *Katu*, *Lavana*, *Kshara*, *Ushna*, and *Tikshna*, it disrupts *Mandagni*. It also aggravates *Pitta* and *Vata doshas*, eventually leading to the development of *Pandu Roga*.

Viharaja Nidana

Pandu Roga may manifest due to persistently faulty daily practices, which affect mental and physical well-being, as well as the use of improper treatments such as *Ativyayama*, *Maithuna*, *Divaswapna*, *Chinta*, *Krodha*, *Rituvashmya*, and *Vegavidharana*.

Nidanarthakara rogas

Pandu Roga can be seen in *Ayurvedic* literature as a symptom of other diseases or an *Upadrava Rupa*. Hence, all these diseases can be considered *Nidanarthakara Rogas* of *Pandu Roga*. Diseases like *Raktapitta*, *Kaphaja Arshas*, *Grahani*, *Jwara*, *Pittaja*

Prameha, Raktarbuda, etc. Anemia can arise from various factors, including inadequate nutrient intake or absorption, infections such as malaria, tuberculosis, and HIV, inflammation, chronic diseases, gynaecological and obstetric conditions, and inherited red blood cell disorders. Iron deficiency is the leading nutritional cause of Anemia, followed by deficiencies in folate, vitamins B12, and vitamin A. Additionally, Anemia can result from low socio-economic status, dietary deficiencies, helminth infections, other infectious diseases, illiteracy, and blood disorders like sickle cell anaemia

Poorvarupa⁹

In *Pandu Roga*, premonitory signs and symptoms are as follows: According to *Acharya Caraka*, they are *Hridyaspandanam, Rokshyam, Swedabhavah, and Shrama*. According to *Acharya Susruta*, they are *Twaksphutana, Shtivana, Gatrasada, Mridbhakshana, and Prekshanakootashotha*. *Acharya Harita* described *Panduta* as the *Poorvarupa* of *Pandu Roga*.

Rupa

Panduta is the cardinal symptom of *Pandu Roga*. Almost all *Acharyas* have discussed various types of discolourations and detailed their *Rupa* across different kinds of *Pandu Roga*. *Pandu* does not arise solely due to deficiency in *Rakta Dhatu* but also involves disturbance of other *Dhatus* due to aggravated *Doshas* at certain stages.

Samanya Rupa of Panduroga¹⁰

Karnaksweda, Hatanala, Durbala, Shrama, Bhrama, Gatrasoola, Jwara, Swasa, Gourava, Aruchi, Akshikutashotha, Hataprabha, Nidralu, Pindikodweshthana, Arohaneayasa.

These *Poorvarupa* and *Rupa* of *Pandu Roga* closely resemble the standard features observed in cases of anemia as-

- *Pandu*- Pallor
- *Durbala*- Weakness
- *Sadana*- Muscle weakness
- *Sharma*- Tiredness
- *Shwasa*- Dyspnoea
- *Gatrasada*- Exertion
- *Hridyaspandanam*-Palpitation

- *Pindikodweshthana*- Intermittent claudication of legs
- *Bhrama*- Giddiness
- *Shishiradwasha*- Cold intolerance

Vishesha Rupa of Panduroga^{10,11}

Acharya Charaka has classified the *Pandu Roga* into five types.

Vataja Pandu Roga

Vataja Pandu Roga arises from the vitiation of *Vata Dosh* due to *Vata Prakopa Ahara* and *Viharas*. The features seen are-*Krishnapanduta, Rukshata, Aruna angatam, Angmarda, Ruja, Toda, Kampa, Sopha, Aanah, Parshwaruk, Shiroruk, Varchasosha, Krishnavit, Aasyavairasya, Bala-Kshaya*.

Some of the above features have a resemblance to Anemia, such as:

Krishnapanduta- This feature resembles melanin skin hyperpigmentation seen over the knuckles in Megaloblastic Anemia.

Rukshata: In Megaloblastic Anemia, Vitamin B12 and folate deficiencies can affect the health of epithelial tissues, including the skin and mucous membranes. This can result in dry, cracked skin and mucosal dryness.

Varchasosha- This particular feature is commonly seen in cases of Megaloblastic Anemia.

Toda- This feature is seen in Pernicious Anemia and Megaloblastic Anemia.

Kampa—This feature is present in Vitamin B12 deficiency Anemia, as long-term Vitamin B12 deficiency can damage nerves and cause neurological problems.

Aasyavairasya: Vitamin B12 and folate deficiency can lead to a reduced tongue papilla, which can affect the sense of taste.

Krishna Mala—This condition is often associated with melena, which can arise from gastrointestinal bleeding caused by ulcers, worm infestations, or other gastrointestinal disorders and lead to Anemia.

Pittaja Pandu Roga

Indulging in *Pitta* vitiating *Nidana* leads to *Pittaja Pandu Roga*. Features seen are-*Peetabha, Haritabha, Jwara, Daha, Trishna, Moorcha, Pipasa, Peeta mootra shakrut, Sweda, Sheeta kamitva, Katukasyta*,

Ushna amla anupashyata, Vidaha, Vidagadhanna, Dourgandhya, Daurbalya, Bhinnavarchasa.

Some of the above features have a resemblance with Anemia, such as *Peetabha, Haritabha, Peeta Mootra Shakrut* - yellowish-green or lemon-yellow colouration in hemolytic states of RBCs is a visible manifestation of increased bilirubin levels. Features seen in hemolytic anemia.

Bhinnavarchasa -Vitamin B12 deficiency, characteristic of Pernicious Anemia, can result in malabsorption of nutrients in the intestines. This malabsorption can affect water absorption and contribute to diarrhoea.

Dourgandhya, Vidaha, Vidagadhanna- These features are similar to features found in Atrophic Gastritis. Pernicious anemia is characterised by autoimmune destruction of the parietal cells in the stomach, leading to Atrophic gastritis.

Daurbalya- Weight loss and muscle wasting are common symptoms associated with Megaloblastic anemia due to deficiencies in vitamin B12 or folate, which impair red blood cell production and overall nutrient absorption, reducing body mass.

Kaphaja Pandu Roga

Aggravated *Kapha* by indulging in *Kapha Prakopa Ahara Vihara* gives rise to *Kaphaja Pandu Roga*. Features seen are-*Gaurava, Tandra, Chardi, Shvetavabhasata, Praseka, Lomoharsha, Murcha, Bhrama, Klama, Sadam, Kasa, Shwasa, Alasya, Aruchi, Vakagraha, Swaragraha, Shuklamutraakshivarcha, Katu Rooksha Ushna Kamatva, Sopha, Madhurasya.*

Some of the features that resemble Anemia are:

Shvetavabhasata- Feature seen in severe anemia.

Aruchi is a common feature in all types of anaemia.

Chardi- Feature seen in Megaloblastic Anemia.

Shwasa- Low red blood cell count results in difficulty breathing and shortness of breath in almost all types of anemia. It is more pronounced in severe anemia.

Sannipataja Pandu Roga

Indulging in the *Nidana* of all three types of *Pandu* leads to an aggravation of the three *Doshas*, resulting in the *Tridoshaja Pandu* with symptoms of *Vataja, Pittaja*, and *Kaphaja* types of *Pandu*.

Mridbhakshanaja Pandu Roga

Bala-varna-agni hani, Ganda-Akshi Koota-Bhru-Pada-Nabhi-Mehana Shotha, Krimi Koshta, Atisara, Saraktamala, Sakaphamala. Most of these characteristics are related to worm infestation and its associated presentations. Oedema in different body parts may be linked to malnourishment resulting from worms disrupting the digestion and absorption processes.

Samprapati of Pandu Roga⁸

Due to *Nidana sevana, Pitta*, located in the heart, is expelled by *Vayu* into the *Dashadhamani*, spreading throughout the entire body. It is located between *Twak* and *Mamsa*, leading to *Shaithilya* and *Gaurava* of the *Dhatus*. Vitiated *Kapha, Vata, Rakta, Twak*, and *Mamsa*, resulting in *Twak Vaivarnata* such as *Pandu, Haridra, Harita* etc. This condition is known as *Pandu Roga*.

Samprapti Ghataka

Dosha - Pachaka, Sadhaka, Ranjaka and Bhrajaka
Pitta

Vyana Vayu

Avalambhaka and Kledaka Kapha

Dushya - Rasa, Rakta, Mamsa and Meda

Agni - Jataragni, Dhatwagni

Agni Dushti - Mandagni

Srotas - Rasavaha, Raktavaha

Srotodushti - Sanga, Vimarga Gamanam

Udbhavasthana - Amashaya

Adhishtana - Twak Mamsa Abyantara

Sancharasthana - Dasadhamani

Vyakthasthana - Twak

Swabhava - Chirakari

Upadrava¹²

Overindulgence in *Nidana* by individuals with *Pandu Roga* can lead to the onset of *Upadras*.

Acharya Sushruta extensively described the *Upadras* associated with *Pandu Roga*, which are- *Aruchi, Pippasa, Chardhi, Jwara, Murdharuja, Agnisada, Kantasopha, Abalatva, Murcha, Klama, Hridaya Peedana, Swasa, Atisara, Kasa, Sula, Sopha, Daha, Avipaka, Swarabheda, Sada.*

Sadhya Asadhyata¹³

When the disease becomes chronic, it indicates the incurability of *Pandu Roga*. The affected person also experiences yellow vision, passes green-coloured loose stools, and is mixed with mucus. The body becomes pale due to blood loss and excessive dryness. *Rogi* is exceedingly afflicted with vomiting, fainting, and thirst.

Chikitsa

Treatment of *Pandu Roga* may be divided into

- *Samanya Chikitsa*- *Snehana*, *Shodhana*, *Aushadasevana*.

- *Vishishta Chikitsa*

Samanya Chikitsa

In *Pandu Rogi*, *Snehana* is essential to bring the *Doshas* into *Koshta* and to correct *Rukshata* as there is *Sneha*- *Abhava*, and the *Doshas* adhere to *Shakhas*. After proper *Snehana*, *Vamana* and *Virechana* are performed using *Snigdha* and *Tikshna Aushadas* to eliminate *Doshas*.

Ayurvedic texts have mentioned numerous single and compound drugs, including herbal, mineral, and herbo-mineral preparations, to appease aggravated *Doshas*, alleviate *Pandu Roga* symptoms, and improve digestion, nutrient absorption, and overall vitality.

Vishesha Chikitsa¹⁴

- *Snigdha Guna Pradhana Aushadas* are intended for internal use in *Vataja Pandu*.
- *Tikta Rasa* and *Shita Veerya Pradhana Aushadas* are intended for internal use in *Pittaja Pandu*.
- *Katu-Tikta Rasa Yukta* and *Ushna Veerya Pradhana Aushadhas* are intended for internal use in *Kaphaja Pandu*.
- *Mishrit Guna Aushadhas* are intended for internal use in *Sannipataja Pandu*.
- In the treatment of *Pandu Roga*, *Asava Arishta*, *Avaleha*, *Churna Yoga* and *Vati Yoga* are used.
- In *Mridbhakshanaja Pandu* - The ingested soil should be expelled from the body through *Tikshna Sodhana*. Once the soil has been eliminated, *Ag-nivardhaka* and *Balvardhaka* medicated *Ghrita* should be administered to enhance the body's strength.

Pathya and Apathya¹⁵ Pathya

• **Ahara**

Shukadhanya- *Purana Yava* & *Godhuma*, *Jeerna Shali*

Shamidhanya- *Mudga*, *Adhaki*, *Masura*

Shaka Varga - *Jivanti*, *Tanduliyaka*, *Guduchi*, *Patola*, *Vartak*, *Kushmanda*, *Rasona*, *Punarnava*

Matasyakshi, *Dronapushpi*,

Phala Varga- *Unripe Banana*, *Ripe Mango*, *Haritaki*, *Bimbi*, *Amalaki*

Madya Varga- *Sauviraka*, *Tushodaka*, *Arishta*,

Mutra Varga- *Gomutra*, *Gorasa Varga*, *Takra*,

Ghrita, *Taila*, *Navneta*, *Aja Ksheera*,

Aja Sarpi, *Purana Sarpi*

Ikshu Varga- *Ikshurasa*, *Guda*, *Sarkara*,

Mamsa Varga- *Jangal Mamsa* & *Matsya*,

Kritanna Varga- *Peya*, *Vilepi*, *Yavagu*, *Yusha*

Anyava Varga- *Haridra*, *Chandana*, *Yavakshara*, *Loha*

Bhasma, *Nagakesar*

• **Vihara**

Vamana, *Virechana*

Dagdha Karma should be performed in areas such as beneath the navel, across the forehead, at the base of the hands, in the joints of the legs, in the armpits and around the middle of the breast.

Apathya

• **Ahara**

Rasa- *Kshara*, *Amla*, *Katu*, *Lavana*

Guna- *Ruksha*, *Teekshna*, *Atiushna*

Anna- *Viruddha bhojana*, *Asatmya bhojana*,

Vidagdha anna, *Guru bhojana*

Jala- *Adhika ambupana*, *Dushta Jala*, *Jala* from rivers of *Sahyadri*, *Vindya*

Shamidhanya- *Nishpava*, *Masha*, *Sarshapa*

Shaka Varga- *Patra shaka*

Sneha Varga- *Tila Taila*

Madya Varga- *Sura*

Kritanna Varga- *Pinyaka*

Aharopayogi Varga- *Hingu*, *Tambula*

• **Vihara**

Divaswapna, *Vyayama*, *Maithuna*, *Ritu Vaishamya*,

Improper administration of *Panchakarma* measures,

Vegadharana, Kama, Chinta, Bhaya, Krodha, Shoka, Raktamokshana, Dhumapana, and Swedana.

DISCUSSION

In *Pandu Roga*, despite *Pitta* being the dominant *dosha*, *Vata dosha*, especially *vyana vayu*, also significantly contributes to its manifestation. According to *Acharyas*, various *Nidana Sevana* such as *Divaswapna*, *Viruddha Bhojana*, *Vidagdha Anna Sevana*, *Ati Vyavaya*, *Ativyayama*, *Ratri jagarana*, *Nidranasha*, *Soka*, *Krodha*, *Bhaya*, lead to impaired digestion and improper formation of *Rasa Dhatu*. Furthermore, these factors also impair the formation of *Rakta Dhatu*, *Mamsa Dhatu*, and other tissues, thereby leading to *Pandu Roga*. According to various classical texts, *Nidanarthakara Roga* also plays a significant role as a causative factor in the manifestation of *Pandu Roga*. Diseases such as *Raktakshaya*, *Rakta Ati pravartana*, *Raktarbuda*, *Raktarshas*, *Raktapradara* and others are directly or indirectly associated with the depletion of *Rakta Dhatu*, which results in *Dhatu Kshaya* overall. Although *Pandu Roga* is a *Sadhya Vyadhi*, it can lead to complications if it becomes chronic in later stages. Therefore, early intervention is crucial.

CONCLUSION

Pandu Roga, primarily a *Pitta Pradhana vyadhi* affecting the *Rasavaha strotas*, has become increasingly prevalent. Inadequate dietary intake or the lack of a balanced diet has contributed significantly to conditions such as nutritional deficiencies, leading to an increase in the number of patients suffering from *Pandu Roga*. The clinical features observed in *Pandu Roga* can be compared to anemia in modern medical science. *Tikshna Samshodhana* is the initial treatment approach for *Pandu Roga*. Following this, *Samshamana Chikitsa* will be administered. *Ayurvedic* medicines and *Shodhana* therapies are effective in managing *Pandu Roga*, offering better outcomes compared to modern medicine, which often entails various adverse effects. Therefore, *Ayurveda* presents a more favourable approach for managing this condition.

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