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Review Article

CRITICAL APPRAISAL OF *LAKSHANASKANDHA* OF *BRUHAT-TRYAEE* WITH SPECIAL REFERENCE TO *PANDU*

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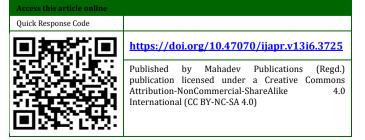
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Article info	ABSTRACT
Article History: Received: 28-05-2025 Accepted: 19-06-2025 Published: 07-07-2025 KEYWORDS: Ayurveda,	ABSTRACT <i>Lakshanas</i> (symptoms and signs) are the backbone of clinical practice, whether in the form of physiological or pathological condition, in context of diagnosis or treatment one need to rely on the manifested symptoms only. Here it is very much important to understand pathophysiology of Pandu in different given context to understand seriousness of the condition and to plan the treatment accordingly. Materials and Methods: Mainly <i>Bruhattrayee</i> i.e., <i>Charaka Sahmita, Sushruta Sahmita</i> and <i>Ashtanga Hridaya</i> with its well- known commentary was selected as main text and <i>Pandu</i> has been searched. Results: It
Lakshana, Pandu, Anaemia, Diagnosis.	appears 23 times in <i>Charaka Samhita</i> , 21 times in <i>Sushruta Samhita</i> , and 8 times in <i>Ashtanga Hrudaya</i> . In the context of clinical signs and symptoms, references to <i>Pandu</i> were identified as follows: 2 instances as <i>Purvarupa</i> , 12 as <i>Rupa</i> , 7 as <i>Upadrava</i> , 2 as <i>Ariṣhṭa</i> , and 29 instances categorized under miscellaneous references. Discussion : The therapeutic approach to <i>Pandu Roga</i> must be individualized and rooted in a comprehensive understanding of its <i>Samprapti</i> . The selection of treatment modalities should be based on the underlying aetiology. Conclusion : Each symptom has its own specific <i>Samprapti</i> . Different symptoms can arise from various mechanisms. To effectively address <i>Pandu</i> , it is crucial to evaluate the causative factors and pathogenesis and plan the treatment accordingly.
INTRODUCTION	I HADR W

INTRODUCTION

In the complex world of health and medicine, symptoms serve as crucial indicators of body's internal state. *Lakshanas* (symptoms and signs) are the backbone of clinical practice, whether in the form of physiological or pathological condition, in context of diagnosis or treatment one need to rely on the manifested symptoms only. Initially, manifested signs and symptoms are assessed to evaluate the condition and then after treatment is planned accordingly.^[1]

To assess nature of disease, its intensity as well as prognosis; manifested symptoms are the only tool.^[2] It is well explained in classical texts that, one disease has many symptoms on other hand many diseases have one common symptoms. On the contrary one symptom seen in many diseases (common feature) and



one symptom seen in one disease exclusively. (as cardinal feature of the disease).^[3] Hence, it is important to know the possibilities of the different disease condition based on one or two or three complaints of patient.

Manifestation of additional symptoms in a patient indicate either different diseases or various stages of a single disease. As a clinician, it is crucial to accurately determine the actual stage of the disease by assessing the presented symptoms and signs- whether they signify the prodromal phase, cardinal or associated features of a condition, potential complications, or even signs of impending death *(Arishta).*

Though Pandu (pallor) has been mentioned as separate disease in all three texts of *Bruhattrayee* but there are some other conditions where *Pandu* has been mentioned as different other condition their pathogenesis (*Samprapti*) of *Pandu* may not be similar as the disease has. Here it is very much important to understand pathophysiology of *Pandu* in different given context to understand seriousness of the condition and to plan the treatment accordingly. In this review article, an attempt has been made to identify understand the pathogenesis of symptom *Pandu* (pallor) when it is seen at different disease. There is no existing work in which a single symptom has been critically analysed across various pathogenic pathways in such a comprehensive manner that it can significantly contribute to treatment planning.

AIMS AND OBJECTIVES

Aim: To prepare a list of contexts of *Pandu* available in *Brihat-Trayee* (where present as a clinical sign and symptoms).

Objectives: Categorize all compiled signs and symptoms in different category i.e., *Purvaroopa, Roopa, Upadrava, Arishta,* miscellaneous category.

MATERIALS AND METHODS

Mainly *Bruhattrayee* i.e., *Charaka Sahmita, Sushruta Sahmita* and *Ashtanga Hridaya* with its well-known commentary was selected as main text and *Pandu* has been searched.

Text	No. of time word <i>Pandu</i> appear	Purvaroopa	Roopa	Updrava	Arishta	Other
Charaka Samhita	23	1	4	2	2	14
Sushruta Samhita	21	1	7	4	-	9
Ashtanga Hrudaya	08	-	1	1	-	6

RESULTS

Purvaroopa	Arsha ^[45] , Rajayakshma ^[6]
Roopa	Kaphaja Arsha ^[7] , Kaphaja Shotha ^[8] , Beejopaghatajanya Klaibya ^[9] , Sarkara ^[10] , Plihodara ^[11] , Asrigdara ^[12] , Pittaja Pratishyaya ^[13] , Revatigraha ^[14] , Vyavayasoshi ^[15] , Purishaja Krimi ^[16]
Upadrava	Snehana ^[17] , Raktapitta ^[18] , Atiraktavisravana ^[19] , Ashmari ^[20] , Pittaja Prameha ^[21] , Raktarbuda ^[22] , Grahani ^[23]
Arishta	Mrutyusuchaka Arishta ^[24] , P <mark>an</mark> du related Arishta ^[25]
	Chhardi Vegadharana Lakshana ^[26] , Shitakale Snehapana Janya Vyadhi ^[27] , Bahudosha ^[28] , Shukrakshya ^[29] , Santarpanajanya Vyadhi ^[30] , Rasa-Pradoshaja Vikara ^[31] , Hinavata ^[32] , Aamatisara Sangrahanajanya Vyadhi ^[33] , Pakvashayagatavisha Lakshana ^[34] , Garbhini Sarpa Dashta Lakshana ^[35] , Garavisha ^[36] , Parisrava Vyapada ^[37] , Diwaswapnajanya Vyapada ^[38] , Yapanabasti Atiyoga ^[39] , Mamasaviddha ^[40] , Katikataruna Marmaviddha lakshana ^[41] , Raktavaha srotoviddha ^[42] , Abhyantara Raktasrava ^[43] , Rajimanta sarpa Dwitiya vega Lakshana ^[44] , due to Amla Atisevana ^[45] , Marmaviddha Samanya Lakshana ^[46] , Mushikavisha ^[47]

DISCUSSION

Pandu as Prodrom

Two diseases i.e., *Arsha* (haemorrhoids) and *Shosha* (pthesis) are there where *Pandu* is listed as *Purvaroopa*. While looking into pathogenesis of both disease, *Arsha* is a disease where impaired *Agni* status is considered as primary entity.

All prodrom do not appear in all conditions, it is quite possible that there are different pathogenesis of condition and accordingly prodroma are seen.

Arsha Purvaroopa

One of the primary etiological factors of *Arsha* (haemorrhoids) in is *Mandagni* (reduced digestive fire), which is also a key feature in liver cirrhosis. Liver cirrhosis can lead to portal hypertension, resulting in engorgement of the rectal veins and subsequently the development of haemorrhoids. Additionally, impaired liver function compromises digestion, often leading to

chronic constipation- another major contributing factor to haemorrhoids. Furthermore, reduced bile production due to liver dysfunction can result in hard stools, increasing straining during defecation, which aggravates or precipitates haemorrhoids.

Significance: Here at this level *Pandu* should be corrected by liver function correction.

Rajyakshma Purvaroopa

Shosha is a condition that develops depletion of all Dhatus gradually which is define as Anuloma and Pratiloma. In Anuloma condition depletion starts from Rasa and later. When Mamsakshaya occurs visible body weight reduction seen. So initially depletion of Rasa and Rakta happens it is seen as Pandu.

In tuberculosis, increased secretion of inflammatory cytokines disrupts iron metabolism, leading to reduced red blood cell (RBC) production and

contributing to anaemia. Additionally, anaemia in tuberculosis is often associated with poor nutritional status. In cases of secondary tuberculosis involving the bone marrow, pancytopenia may occur due to marrow infiltration or suppression.^[48]

Pandu as symptom

Kaphaja Shotha: Here *Pandu* word mentioned to denote pale white colour of swelling not as a disease anaemia.

Kaphaja Arsha: Kaphaja Arsha, characterized by the *Ati-Agnimandya* which indicate chronic digestive inefficiency and impaired metabolic transformation. The *Ama-prabhava* in *Kaphaja Arsha* leads to systemic effects, particularly *Dhatu-Kṣaya*, due to the poor assimilation of nutrients. Which cause *Rakta-Kṣhaya*. One of the hallmark features of *Kaphaja Arsha* is its *Dirghakala Anubandha-* a chronic, long-standing nature. Over time, especially in cases where bleeding piles are present, persistent blood loss contributes directly to the development of iron deficiency anaemia.

Bijopaghata Janya Klaibya: Where Beejopaghatajanya Klaibya^[49] (due to Shoka, Chinta, Bhaya, Trasa, Atistrisevana and Panchakarma Apachara) is narrated pallor colour is mentioned. But this may reflect persons condition in present situations instead of actual disease Pandu.

Sharkara: In patients with *Sharkara*, damage to the *Mutravaha Srotas* leads to the presence of *Raktamishrita Mutra*, which can result in *Pandu*.

Ashmari and Sarkara, some of time it has been mentioned as word replacement. And sometime small size of Ashmari has been considered as Sarkara. In first context it is quite possible that larger stone can cause persistent bleeding, and that chronic blood loss can cause gradual anaemia due to iron deficiency.^[50] Further such larger stone may lead to obstructive Uropathy and impair kidney function, and such damaged kidney might not produce enough erythropoietin leading to anaemia.^[51]

Further if *Sarkara* is considered as broken stone^[52] it causes damage while coming down in Urinary tract it causes not bleeding but also cause acute renal colic that cause *Pandu* colour instead of actual disease *Pandu*.

Pleehodara: An enlarged spleen can cause excessive haemolysis due to its increased filtering activity. This can lead to a reduction in the number of red blood cells, resulting in anaemia.^[53] Here the treatment of *Pleehodara* is to be instead of *Pandu*.

Asrigdara: Menorrhagia, metrorrhagia or DUB (Dysfunctional uterine bleeding) is the obvious cause for *Rakta-Dhatu Kshaya*.

Pittaja Pratishyaya: Ushna and Tikshna property of *Pitta* and altered digestion (due to vitiated *Pitta*) lead to hamper nutrition in body their consequence may

lead to *Pandu*. Further it is chronic inflammatory diseases that releases various cytokine like IL-6, TNF α etc. that hamper the production of erythrocytes as well as ion metabolism and it that way it can contribute to anaemia.

Revatigraha: Acharya *Sushruta* describe *Revatigraha* and symptoms of *Revatigraha* are *Raktasya*, *Haritamala*, *Atipandu deha*, *Jwara*, *Mukhapaka*.

Revati Graha, as described in Ayurveda, shows strong clinical parallels with pernicious anaemia. Symptoms like *Raktashya/Mukhapāka* correlate with oral lesions (glossitis, stomatitis) seen in vitamin B12 deficiency due to epithelial atrophy. Greenish loose stools align with diarrhoea and altered stool colour caused by malabsorption and intestinal mucosal atrophy. Fever in *Revati* may reflect the low-grade systemic inflammation of autoimmune gastritis, the root cause of pernicious anaemia. *Atipāņdu deha* corresponds to pallor resulting from haemolysis and ineffective erythropoiesis.^[54]

Vyavyashoshi: Excessive sexual intercourse leads to *Shukrakshaya* which in turn causes *Pratiloma Dhatu Kshaya*, ultimately resulting in *Raktadhatu Kshaya* leading to pallor.

Purishaja Krimi: General symptoms of intestinal helminthic infections often include abdominal pain or discomfort, diarrhoea or loose stools, and nausea or vomiting. Patients may experience a loss of appetite or, in some cases, an increased appetite, accompanied by unexplained weight loss despite adequate food intake. According to *Sushruta* Symptoms of *Purishaja Krimi* are *Pandu, Vistambha, Shula, Agnimandya, Balakshaya.* When *Krimi* infest the digestive system or other organs, they may cause nutrient malabsorption, leading to deficiencies in iron and other essential nutrients necessary for haemopoiesis. This can result in the depletion of *Raktadhatu* which manifests as anaemia.

Intestinal helminths may cause anaemia through reduced food intake, malabsorption and endogenous nutrient loss. The main anaemia- causing intestinal helminths are hookworms (Ancylostoma duodenale), Trichuris trichiura and schistosomes, with hookworms being most common. the hookworm sucks blood, releases anticoagulants, causes bleeding in the intestinal wall, and competes with the host for nutrition leading to iron deficiency anaemia.^[55]

Upadrava of Snehana: Excessive internal or external oleation can cause *Agnimandya*, this could impair digestion and nutrient absorption, leading to the improper assimilation of essential nutrients like iron, which is crucial for haemopoiesis. Poor digestion can reduce the body's ability to generate *Raktadhatu* contributing to anaemia.

A high-fat diet, particularly one rich in trans fats or processed oils, can cause chronic inflammation.

Inflammation can affect iron metabolism by increasing levels of hepcidin, a hormone that regulates iron absorption. Elevated hepcidin levels can reduce iron availability, leading to anaemia.^[56]

Upadrava of Raktapitta: Raktapitta is a condition marked by excessive bleeding from various parts of the body, due to the aggravation of *Pitta Dosha*. When *Pitta* becomes aggravated, it vitiates the *Rakta Dhatu* causing spontaneous bleeding. This bleeding can occur from the nose, mouth, gastrointestinal tract, or skin. This depletion of blood is an obvious cause of anaemia.

Upadrava of *Ati-Raktavisravana:* Excess bloodletting causes a drop in the overall number of red blood cells and cause Anaemia.

Upadrava of Pittaja Prameha: In Raktameha (type of *Pittaja Prameha*) the presence of blood in the urine signifies a blood loss. Which can lead to depletion of important nutrients such as iron, causing anaemia or in *Pittaja Prameha Panduroga* is manifested in renal failure stage (due to erythropoietin deficiency).

Upadrava of *Raktarbuda: Acharya Sushruta* clearly explains that *Pandu* can arise as a complication of *Raktaarbuda* resulting from excessive blood loss which can cause anaemia.^[57]

In malignancy, tumour growth is highly dependent on an adequate blood supply to sustain rapid cellular proliferation and metabolic demands. As a result, anaemia is a common clinical finding in many types of cancer, either due to chronic blood loss, bone marrow suppression, nutritional deficiencies, or the anaemia of chronic disease.

Anaemia is a common complication in patients with hematologic malignancies, and is caused by a variety of mechanisms, including neoplastic cell infiltration into the bone marrow, haemolysis, nutritional deficiencies, and defects in erythropoiesis because of the disease itself or cytotoxic therapy.^[58]

Upadrava of Grahani: Acharya Sushruta stated that *Pandu* can manifest in the advanced stage of *Grahani* disease. Due to *Agnimandya* in *Grahani*, proper nourishment of the tissues does not occur. This leads to the development of *Pandu*. In Morden context of *Grahani Roga* it can compared with Malabsorption Syndrome.

Iron is primarily absorbed in the small intestine. Conditions that affect this part of the gut, such as celiac disease, malabsorption syndrome can reduce iron absorption, leading to iron-deficiency anaemia.^[59]

Chhardi Vegadharana Lakshana: Vomiting is the body's natural response to expel toxins. Suppressing this urge can lead to the accumulation of *Ama* in the body, leads to *Dhatvagnimandya*. which results in improper digestion and absorption of nutrients needed

for haemopoiesis, leading to nutrient deficiency and *Raktakshaya*.

In the complications of *Chhardi, Acharya Charaka* described vomitus having a foul smell resembling that of stool and urine, which can be correlated with the clinical condition of uraemia. The accumulation of uremic toxins in the bloodstream hampers erythropoietin production, thereby impairing the growth and maturation of red blood cells in the bone marrow and ultimately leading to defective erythropoiesis.^[60]

Snehapana at night during *Shitakala: Agni* is strongest during the day and weakest at night. Administering oleation at night might impair digestion and absorption. A weakened digestive system may not effectively process nutrients, leading to deficiencies that can cause anaemia.

Shukra Kshaya Lakshana: *Shukra Kshaya* affects the nourishment of *Rakta Dhatu* because the essence of *Shukra Dhatu* contributes to the overall balance and health of other dhatus. *Shukrakshaya* can lead to poor nourishment of blood, resulting in symptoms of anaemia such as pallor, fatigue, and weakness.

Santarpana Janya Vyadhi: Santarpanajanya Vyadhi refers to diseases caused by excessive nourishment, leading to metabolic disturbances and nutritional imbalances which can ultimately result in anaemia.

Rasapradoshaja vikara: Rasapradoshaja Vikara refers to diseases or disorders caused by the *Rasadushti. Rasa Dhatu* is the first *Dhatu* derived from the digested food and is crucial for nourishing all other tissues in the body. If *Rasa Dhatu* is vitiated, it affects the nourishment and formation of blood, leading to anaemia.

Sangrahana in Aamatisara: When *Amaatisara* is managed with *Stambhana* therapies, it can cause the development of *Aama*. When *Aama* is present, it can obstruct the normal absorption of nutrients from the digestive tract, affecting the nourishment of all *Dhatus*, including *Rakta Dhatu* and cause anaemia.

Anti-diarrhoeal drugs slow intestinal motility by acting on opioid receptors in the gut. If used in infections like bacterial dysentery or amoebiasis, it retains toxins, pathogens, and inflammatory mediators in the intestines. This may exacerbate mucosal damage, impairing nutrient absorption. Prolonged mucosal damage can impair the absorption of iron, folate, and vitamin B12, leading to nutritional Anaemia^[61]

Pakvashaya Gata Visha/ Garbhini Sarpa Dashta/ Garavisha Lakshana/ Rajimanta Sarpa Dashta, Mushika Dansha Lakshana: The venomous nature, pattern, and clinical features (bleeding, swelling, necrosis) mentioned in classical texts under Rajimanta Rajput Rajendrasinh, Darshna Pandya, Karan Surati. Lakshanaskandha of Bruhat-Tryaee with special reference to Pandu

Sarpa correlate well with the hemotoxic effects seen in Russell's viper bites. Hemotoxic venoms contain enzymes, such as phospholipase A2 and metalloproteinases, that directly destroy red blood cells, leading to acute intravascular haemolytic Anaemia^[62]

Panchakarma Janya Vyapada: Parisrava Vyapada refers to excessive or abnormal discharge. This can include conditions where there is an abnormal loss of blood or other bodily fluids. Here pallor discolouration can be a complication of *Parisrava Vyapada* due to the loss of blood and its impact on the body's ability to maintain blood levels.

Due to *Diwaswapna:* Chronic daytime sleeping may disrupt the sleep–wake cycle, which can: Reduce night-time melatonin regulation, affect hormonal rhythms, including those involved in erythropoiesis (e.g., erythropoietin), alter gut microbiota, impacting iron absorption over time which leads to anaemia.^[63]

Due to *Amla Atisevana:* Highly acidic sour foods cause gastritis, acid reflux, or peptic ulcers result in chronic blood loss occult GI bleeding leads to Iron deficiency anaemia or Chronic gut inflammation due to acidic foods may impair nutrient absorption (iron, folate, B12) and cause anaemia.^[64]

Viddha Lakshana: Pandu is mentioned in Marmaviddha Lakshana, Raktavaha Srotoviddha Lakshana. Marmas are rich in capillaries and blood vessels. Injury to these areas can result in severe bleeding, which can deplete the body's blood supply and lead to Pandu.

Importance of critical appraisal of *Pandu* in Appreciation of *Pandu* in Approximation of *Pandu* in Approximatio

The therapeutic approach to *Pandu Roga* must be individualized and rooted in a comprehensive understanding of its *Samprapti*. The selection of treatment modalities should be based on the underlying aetiology.

In cases where *Pandu* is associated with conditions such as *Rajayakshma*, *Shukrakshaya*, or *Klaibya* the primary pathological process involves progressive tissue depletion (*Dhatukshaya*). Here, therapeutic strategies should emphasize *Dhatuposhana* and *Brimhana Chikitsa* to restore tissue integrity and systemic vitality.

Conversely, when *Pandu* originates from *Rasapradoshaja Vikara* or *Santarpanajanya Vyadhi* impaired *Agni* and compromised *Rasa Dhatu Nirmanotpatti* (primary nutrient fluid) are central to the pathology. In such instances, therapeutic emphasis should be placed on *Deepana, Pachana,* and *Langhana* aiming to correct metabolic derangement and improve nutrient assimilation.

In cases of *Pandu* resulting from *Raktasrava* or trauma-related pathologies, the focus should shift to

correcting *Pitta* imbalance and supporting *Rakta Dhatu* replenishment.

CONCLUSION

Each symptom has its own specific *Samprapti*. Different symptoms can arise from various mechanisms.

By thoroughly understanding the pathogenesis and diagnosing accurately, one can treat the condition with fewer formulations. To effectively address *Pandu*, it is crucial to evaluate the causative factors and pathogenesis and plan the treatment accordingly. If root cause for *Pandu* will be eradicated, it can manage easily and, in less time, and with less formulations.

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