



Understanding Pandu Roga through classical texts w.s.r. to Iron Deficiency Anaemia

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Pandu is a symptom as well as disease and mostly resembles with anaemia of modern science. It is a Rasa Pradoshaj Vikara. Vitiating of Pitta predominant Tridosha initiates pathological processes in the body and causes Pandu Roga. Anaemia is the deficiency of haemoglobin in the blood which can be caused by either few red blood cells [RBCs] or too little Haemoglobin in the cells. Iron deficiency anaemia is the commonest nutritional deficiency, affecting nearly 1/3rd of the world's population. For the diagnosis and effective treatment, a physician must have thorough knowledge of Pandu Roga from different ancient Ayurvedic texts. Therefore, this article aims to review the concept of Pandu Roga according to various classical Ayurvedic texts.

Keywords: Pandu Roga, Iron deficiency anaemia, Haemoglobin, classical Ayurvedic texts

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Introduction

The *Dosha*, *Dhatu* and *Mala* are basis [*Moola*] of body, which are responsible for all physiological processes in body. Vitiating of *Pitta* predominant *Tridosha* initiates pathological processes in body and causes *Pandu Roga*.^[1] In this condition, vitiated *Pitta* afflicts *Dhatu*s as a result complexion, strength, unctuousness gets too much diminished due to morbidity of *Dosha* and *dushya* and as a result blood, fat and *Ojas* gets exceedingly reduced. ^[2] *Acharya Charaka* has included *Pandu Roga* in *Rasapradoshaj Vikara*^[3] and *Santarpana Janya Vyadhi*.^[4] Also *Vachaspathya* refers *Pandu* as color of patient resembles with colour of pollen grains of *Ketaki* flower which is whitish yellow [pale] in appearance.^[5] It is characterized by clinical features such as *Panduta* [pallor], *Daurbalya* [general debility], *Angsaad* [weakness of body], *Annadweshya* [aversion towards food], *Shrama* [fatigue], *Bhrama* [giddiness], *Gatrashoola* [bodyache], *Aruchi* [anorexia], *Hataanala* [poor digestion], *Akshikoota Shotha* [swelling over peri-orbital area].^[6] *Pandu* is a symptom as well as disease and mostly resembles with anaemia of modern science. Anaemia word is derived from Greek word 'Anaimia'. 'An' means without and 'Haima' means blood.^[7] According to modern science, Anaemia is deficiency of haemoglobin in blood which can be caused by either few red blood cells [RBCs] or too little Haemoglobin in cells.^[8] Nutritional deficiency anaemia is very common in India and Iron deficiency is commonest nutritional deficiency all over world, but its prevalence is higher in developing countries like India. It most commonly affects children and females of reproductive age group. In India, prevalence of anaemia is 52%. WHO estimates that nearly 1/3rd of world's population is suffering from Anaemia. The data of National family health survey-3 shows that Anaemia is particularly high [55.3%] in all women of 15-49 years age group.^[9] Its causes mainly include poor vegetarian diet, malabsorption of iron, hookworm infections, excessive blood loss, menstruation and childbirth. Its symptoms resembles with *Pandu Roga* which include fatigue, weakness, dizziness and shortness of breath.

Through this article, an attempt has been made to review various available classical Ayurvedic texts to find out different description about *Pandu Roga* w.s.r. to Iron deficiency Anaemia.

Aims and Objectives

Aim

To study the *Vyutpatti*, *Nirukti*, *Paribhasha*, *Paryaya*, *Prakara*, *Nidana*, *Poorvaroop*, *Roopa*, *Samprapti*, *Sadhyaasadyatwa*, *Chikitsa*, *Pathya-Apathya* of *Pandu Roga*.

Objective

To review about *Pandu Roga* systematically on the basis of classical Ayurvedic literature.

Materials and Methods

Data has been collected from different classical Ayurvedic texts, research journals and databases like PubMed, Google scholar, Scopus and many more.

Review of Literature

Vyutpatti^[10]

The *Pandu* word is derived from *Dhatu* '*Padi Nashane*' by adding '*Ku Pratyaya*' to it which means *Nashana* that is "the loss".

Nirukti ^{11]}

As per *Shabdarnava Kosh*, '*Pandustu Peetbhagardh Ketaki Dhulisannibham*' means *Pandu* resembles the colour of pollen grains of *Ketaki* flower which is whitish yellow.

Definition

'*Sarveshu Chaitehvih Pandubhavo Yatoadhikoatah Khalu Pandurogah*'

Due to the predominance of paleness all over the body, it is named as *Pandu Roga*.^[12]

Synonyms

As per *Sushruta Samhita*, *Kamala*, *Panaki*, *Lagharaka*, *Alasa* and *Kumbhahwa* are the synonyms of *Pandu*.^[13]

Disease Review

Directives regarding *Pandu Roga* are found in *Rigveda* and *Atharvaveda*. *Pandu Roga* has been mentioned in *Rigveda* and *Atharvaveda* by the name of *Halima* and *Harima* respectively.^[14] Ancient Indian literatures such as *Mahabharata*, *Valmiki Ramayana*, *Yoga Vasishtha*,

Garuda Purana and Agni Purana contain descriptions of *Pandu Roga*. In *Mahabharata*, *Pandu* was described as the father of *Panch Pandava* and as the son of *Maharshi Ved Vyasa*. In *Garuda Purana*, there is a reference in which "*Takra*" mixed with *Lauha Churna* has been advocated for the treatment of *Pandu*. This shows that *Pandu Roga* was prevalent in that period and physicians were able to diagnose and treat it. It is therefore apparent that the use of Iron preparation for the treatment of *Pandu Roga* was well known since ancient times.

Detailed description of *Pandu Roga* is given in most of the Ayurvedic literature, which is hereby summarized as under-

Samhita	Pandu description	Types
Charak Samhita[15]	Chikitsasthana- Ch. 16	5-Vaataja, Pittaja, Kaphaja, Sannipaataja, Mridbhakshanjanya
Sushruta Samhita[16]	Uttaratantra- Ch 44	4-Vaataja, Pittaja, Kaphaja, Sannipaataja
Ashtang Sangraha[17]	Nidaanasthaana- Ch. 13 Chikitsasthaana-Ch. 16	5-Vaataja, Pittaja, Kaphaja, Sannipaataja, Mridbhakshanjanya
Ashtang Hridaya[18]	Nidaanasthaana- Ch. 13 Chikitsasthaana-Ch. 18	5-Vaataja, Pittaja, Kaphaja, Sannipaataja, Mridbhakshanjanya
Kashyap Samhita[19]	Vedanaadhyaya	1-Pandu
Harita Samhita[20]	Trityasthan Ch.8	8-Vaataja, Pittaja, Kaphaja, Sannipaataja, Mridbhakshanjanya, Kamala, Kumbhakamala, Halimak
Bhavprakash [21]	Madhyam Khanda Ch.8	5-Vaataja, Pittaja, Kaphaja, Sannipaataja, Mridbhakshanjanya

Nidana[22,23]

Nidana of *Pandu Roga* can be broadly classified into 3 groups as per various classical texts- (*Charaka Chikitsa* 16/8; *Sushruta Uttarsthana* 44/3]

1. Aaharaja Nidana
2. Viharaja Nidana
3. Nidanarthakara Roga

1) Aaharaja Nidana

Acharya Charaka has described following etiological factors regarding *Ahara*:

- Excess intake of *Kshara* (alkaline), *Amla* (sour), *Lavana* (salt), *Ushna* (hot) and *Teekshna* (penetrating) *Ahara*
- *Virudhha* (incompatibles) and *Asatmya* (unwholesome) *Ahara*
- Excessive intake of *Nishpava*, *Masha*, *Pinyaka* and *Til Taila*.

- Excessive consumption of *Madya* (wine)
- *Mridabhakshana* [addicted to eating clay or salts]
- Excessive intake of *Kashaya*, *Katu Rasa*

2. Viharaj Nidana

According to *Acharya Charaka*:

- *Vidagdhe Anne Diwaswapna Vyayama Vyavaya* [Sleeping at day time, exercise and sexual intercourse even before the food is not properly digested]
- *Pratikarma Vaishmaya* [Improper administration of panchakarma]
- *Ritu Vaishamay* (improper management of seasonal regimen)
- *Vega Vidharana* [suppression of natural urges]
- Affliction of mind with *Kama*, *Bhaya*, *Chinta*, *Krodha*, *Shoka*

Acharya Harita has also included *Nidranasha* (Loss of Sleep), *Atinidra* (Excessive sleep), *Avyayama* (No any exercise), *Atishrama* (Excessive exercise] in *Viharaj Nidana*.

Nidanarthakara Roga

In various Ayurvedic literature, *Pandu Roga* is either indicated as a symptom of various diseases or as *updrava Swaroopa*.

So, all of these various diseases can be considered as the cause of *Pandu* that is *Nidanarthaka Roga* of *Pandu* for e.g. *Raktaarsha*, *Raktarbuda*, *Raktapradara*, *Rajyakshama*, *Punaravartaka Jwara* etc. which directly or indirectly vitiate *Doshas* in our body and manifests as *Pandu Roga*.

Purvaroop

The symptoms which manifest themselves even before the appearance of the disease are called as *Purvaroop*.

According to Acharya Charaka[24]

1. *Hridyaspandanam* (Palpitation)
2. *Rokshyam* (dryness of the skin)
3. *Swedabhavah* (absence of sweating)
4. *Shramsathata* (fatigue)

According to Acharya Sushruta[25]

1. *Twaksphutanam* (cracking of skin)

2. *Shthivana* (salivation)
3. *Gatrasada* (sense of lassitude in the limbs)
4. *Mridbhakshanam* (liking for mud intake)
5. *Prekshankootsothhah* (swelling over eye socket)
6. *Vid-Mutra Pitata* (yellow colour of stool-urine)
7. *Avipaka* (Indigestion)

Acharya *Harita* has mentioned *Panduta* in the *Purvaroop* of *Pandu Roga*

Roopa / Lakshana

Acharya *Charaka* has mentioned the *Samanya* and *Vishesha Lakshana* of *Pandu Roga* in *Chikitsa Sthaan* according to the *Dosha* involvement which is mentioned below-

Vishishta Lakshana[27,28]

Acharya Charaka had classified Pandu Roga into 5 types:

Vataja Pandu	Pittaja Pandu	Kaphaja Pandu
<ul style="list-style-type: none"> ■ Krishna-Panduta (black and pale yellow discolouration) ■ Rukshata (dryness) ■ Aruna Angatam (Redness of the body) ■ Angmarda (body ache) ■ Ruja (pain) ■ Toda (Pricking sensation), ■ Kampa (tremor) ■ Parshvashiroruja (pain in chest-head) ■ Varchashosh (dryness of stool) ■ Aashyavairasya (distaste in mouth) ■ Shopha (edema over body parts) ■ Aanah (constipation) ■ Bala-Kshaya (weakness). 	<ul style="list-style-type: none"> ■ Pita-Haritabhata (complexion become either yellow or green) ■ Jwara (fever) ■ Daha (burning sensation) ■ Trishna (excessive thirst) ■ Murcha (fainting) ■ Pipasa (thirst) ■ Pitamutrashakruta (yellowish discolouration of urine and stool) ■ Sweda (profuse sweating) ■ Sheetakamta (increase desire to take cold things) ■ Katukasayta (feeling pungent taste in mouth) ■ Ushnaamlanupashyata (uneasiness for hot and sour things) ■ Vidahe vidagadhe Anne (feeling of burning sensation during indigestion of food) ■ Daurgandhya (foul smell of body) ■ Daurbalya (weakness) ■ Bhinnvarcha (diarrhoea) 	<ul style="list-style-type: none"> ■ Gaurava (heaviness) ■ Tandra (Drowsiness) ■ Chhardi (vomiting) ■ Shvetavbhasta (whitish complexion) ■ Praseka (excessive salivation) ■ Lomharsha (Horripilation) ■ Murchha (Fainting) ■ Bhrama (giddiness) ■ Klama (mental fatigue) ■ Sada (looseness of body parts) ■ Kasa, Shwasa (dyspnoea) ■ Alasya (laziness) ■ Aruchi (anorexia) ■ Vaka-swaragraha (obstruction of speech and voice) ■ Shukla Mutra-Akshivarchasa (whitish discolouration of urine, eye and stool) ■ Katurukshoshna Kamta (feeling to take pungent, hot and dry things) ■ Shwayathu (generalised swelling) ■ Madhurasyata (sweet taste of the mouth)

Sannipataja Pandu: When all the three *doshas* gets vitiated it leads to *Sannipataja Pandu Roga* and shows all the symptoms of *Vataja*, *Pittaja* and *Kaphaja Pandu*.

Mridbhakshanjanya Pandu: Soil having *Madhura Rasa* vitiates the *Kapha Dosha*, soil having *Lavana Rasa* vitiates *Pitta Dosha*, soil having *Kashaya Rasa* vitiates *Vata Dosha*.

Samaanya Lakshana[26]

Karnashveda (tinnitus), *Hatanala* [weak digestive fire], *Daurbalya* (general weakness), *Annadweshya* (aversion towards food), *Shrama* (fatigue), *Bhrama* (giddiness), *Gatrashoola* (body ache), *Jwara* (fever), *Shwasa* (breathlessness), *Gauravata* (heaviness in body), *Aruchi* (anorexia), *Akshikutashotha* (swelling over orbital region), *Shirnaloma* (hair fall), *Hataprabha* (body complexion become greenish), *Kopana* [anger], *Shishirdweshi* [dislikes cold things], *Nidralu* (feeling of drowsiness), *Shtheevan* (spitting frequently), *Alpawaka* (avoid speaking), *Pindikodweshthana* (calf muscle pain), *Kati-Uru-Paada Ruka* (pain & weak. in lower back, thighs & feet), *Arohanaayasa* (patient feel exha. on climbing)

Its symptoms include

1. *Bala-Varna-Agni Nash* (loss of strength, complexion and power of digestion metabolism)
2. *Ganda-Akshikuta-Bhrupad-Nabhi-Mehan Shotha* (oedema on cheek, orbital region, eyebrow, feet, umbilical region, genital parts)
3. *Krimi Koshta* (Appearance of intestinal worm)
4. *Atisaryet Mala Sasruka Kapha* (diarrhoea associated with blood and mucus).

Samprapti[29]

When *Doshas*, with *Pitta* as most predominant one, are aggravated in *Dhaatus*, then *Dhaatus* get afflicted, with result that they become *Shithila* (weak) and *Guru* (heavy). Thereafter, complexion, strength and unctuousness and properties of *Ojas* gets exceedingly reduced on account of vitiation of *Doshas* and *Dhaatus*. So, patient becomes poor in blood, fat and vitality; his sense organs become weak; and he suffers from discoloration. Aggravation of *Pitta* located in *Hridaya* (cardiac region) takes place due to its exciting causes, then this *Pitta* being forcefully propelled by *Vaayu*, enters into ten vessels and circulates in entire body. Being located between skin and muscle tissue, this aggravated *Pitta* vitiates *Kapha*, *Vaayu*, *Asrik* (blood), skin and muscles as a result different types of coloration, like *Pandu* (pale yellow), *Haridra* (yellow) and *Harita* (green) appearance of skin. This is called *Pandu Roga*.

Samprapti Chakra[30]

Tridosha Prakopaka Ahara-Vihara (Pitta Pradhan)
 ↓
 Aggravation of *Sadhak Pitta* located in *Hridaya*
 ↓
 Expelled from *Hridaya* by powerful *Vata Dosha*
 ↓
 Enters *Dasha-Dhamaniya* & circulates all over body
 ↓
 Causes *Rasavaha Strotasa Dushti*
 ↓
Dushti of *Twaka, Rakta, Mansa*
 ↓
Ashraya of *Dosha* between *Twaka* and *Mansa*
 ↓
Awrodha to *Bhrajaka Pitta*
 ↓
 Expressions of various *Varnas* on *Twacha*
 ↓
Pandu

Samprapti Ghatak[31]

Dosha: *Pitta Pradhan Tridoshaprakopa*
Dushya: *Rasa, Rakta, Twacha, Mansa*
Srotas: *Rasavaha, Raktavaha*
Srotodushtiprakar: *Sanga*
Adhistan: *Sarvasharirgattwacha*
Aashya: *Aamshayotha*
Agni: *Dhatvagni*
Vyadhisvabhav: *Chirkari*
Sadhyashadya: *Sadhya/Krichsadhya*

Sadhya-Asadhyatva[32]

The signs and symptoms indicating the *Pandu Roga* become incurable are:

1. *Chirotpanna* - Disease become chronic
2. *Kharibhuta* - Excessive dryness appeared in the patient
3. *Kalaprakarshat Shuno* - patient having oedema due to chronicity of the disease
4. *Pitani Pashyati* - patient gets yellow vision
5. *Baddha Alpa Vitaka* - patient is fully or partially constipated
6. *Sakapha Harita Atisara* - patient passes loose stool greenish in colour mixed with mucus
7. *Chhardi, Murcha, Trushardita* - patient exceedingly affected with vomiting, fainting and morbid thirst
8. *Asrik Kshayad Shwetatvam* - patient becomes pale due to blood loss

Chikitsa: The general treatment principles according to various Ayurvedic classical texts are:

1. According to Acharya Charaka[33]

"*Tatra Panduvamayi Snigdhatteekshnaurdhvaaranulomikeh Sansodhyo Mriduvitikteeh Kaamli Tu Virechane*"

According to Acharya Charaka, *Teekshna Vaman* and *Virechana* should be done in *Sadhya Pandu Roga*.

2. According to Acharya Sushruta[34]

"*Hareccha Doshan Bahushoalpamatrach Shvayedhhi Doshesvtinirharaytesu*"

- In *Pandu Roga*, when *Doshas* get situated in *Dhatus*, *Strotasa* and *Ashayas*, they should be removed by *Vaman* and *Virechana* repeatedly.
- *Snehana Karma*: There is *Snehabhava* in *Pandu Rogi* and the *Doshas* get adhered to *Shakhas*.

- Hence to bring the *Doshas* in *Koshtha* and to correct *Rukshata*, both *Abhyantar* and *Bahya Snehana* is essential in *Pandu Rogi*. For *Abhyantar Snehana*, *Acharya Charaka* has indicated some medicated ghee like *Panchagavya Ghrit*, *Mahatiktaka Ghrit*, *Kalyanaka Ghrit*
- *Vaman* and *Virechana Karma*: After bringing *Doshas* in *Koshtha* by *Samyak Snehana* and *Swedana*, the *Doshas* are expelled out of the body by the action of *Vaman* and *Virechana Karma*.

For *Pitta Dosha*, *Virechana* is considered as the best *Shodhanopkrama*, Hence *Virechana* is most suitable in *Pandu Roga*.

- *Vishesha Chikitsa*

1. Vataja Pandu: *Snigdha Guna Pradhana Aushadha* should be used internally.

2. Pittaja Pandu: *Tikta Rasa* and *Shitavirya Pradhana Aushadha* should be used.

3. Kaphaja Pandu: *Katu Tikta Rasa Yukta* and *Ushna Virya Pradhana Aushadha* should be used.

4. Sannipataja Pandu: *Mishra Guna Aushadha* should be used.

5. Mridbhakshanjanya Pandu: The ingested soil should be removed from the body by *Tikshna Sanshodhana*. After the *Shodhana Karma*, *Agnivardhaka* and *Balavardhaka* medicated *Ghrita* should be used to strengthen the body

Aushadhi Chikitsa

All the *Acharyas* in various classical texts have mentioned the use of various formulations in the treatment of *Pandu Roga* as mentioned below:-

SN	Kalpana	Aushadhi
1.	Churna	Trivrit Churna - In Pittaj Pandu Haritakyadi Churna - In Kaphaj Pandu Navayasa Churna Vishaladi Churna Triphala Churna Ajashakritadi Churna
2.	Kwatha	Phalatrikadi Kwath Darvyadi Kwath Yashtimadhu Kwath Nyagrodhadi Varga Kwath
3.	Lauha - mandoor	Vidangadi Lauha Dhatri Lauha Trayushanadi Mandoor Punarnavadi Mandoor Vajravatak Mandoor Nisha Lauha Ashtadashang Lauha Trikrayadi Lauha Yograjau Lauha Panchamrit Lauha Mandoor
4.	Ghrita	Draksha Ghrita Murvadi Ghrita Vyoshadi Ghrita [In Mridbhakshanjanya Pandu] Dadima Ghrita Danti Ghrita Pathya Ghrita Brihatyadi Ghrita
5.	Ras/Vati/Modak	Chandrasuryatmak Ras Pranavallabh Ras Panchanan Vati Pandusudan Ras Pandupanchanan Ras Shranandodaya Ras Ayastiladi Modak Mandur Vatak Shilajatu Vatak Vibhitakadi Vatak

SN	Kalpna	Aushadhi
6.	Arishta/Asava	Dhatryarishta Parpatadhyarishta Bijakarishtha Gaudarishta Lauhasava
7.	Avaleha	Darvyadi Leha Amalakyavaleha Ayorajovyoshadi Avaleha Vidangavaleha

Pathya-Apathya

1. Pathya Ahara

According to *Acharya Charaka*[35]

- *Shalianna, Yava, Godhuma* mixed with *Yusha* prepared from *Mudga, Adhaki* and *Masura*
- *Jangal Mamsa Rasa*

According to *Acharya Sushruta*[36]

- *Pandu Rogi* must use *Arishta* prepared from *Guda, Sharkara* (sugar) and *Madhu* (honey)
- *Asava* prepared from *Mutra* and *Kshara*
- *Jangala Mamsa Rasa* added with *Sneha* (fat) and *Amalaki Swarasa*

2. Apathya Ahara and Vihara[37]

In *Bhaisajya Ratnavali* following *Apathya Aahar-Vihara* are mentioned

- *Rakta Sruti, Dhoompan, Vaman Vega Dharan, Swedan* and *Maithoon*
- Avoid consumption of *Shimbi, Patrashaak, Ramath, Masha, Ambupaan, Pindyaak, Tambul, Sarshapa*, and *Sura*
- Intake of water of rivers like those originating from *Vindhya* and *Sahyadri* Mountains
- All types of salt, sour edibles, *Virudhha Anna* (incompatible foods), food that is *Guru* (heavy to digest) and *Vidahi* (cause a burning sensation).

Discussion

Pandu Roga, as described in classical Ayurvedic texts, is disorder characterized by pallor of skin, fatigue, weakness & mental dullness, which bears striking resemblance to iron-deficiency anaemia as understood in contemporary medical science. However, Ayurvedic perspective provides more holistic view, attributing condition not only to nutritional deficiencies but also to imbalances in *doshas*, particularly *Pitta* & *Rakta Dhatu*.

The pathogenesis of *Pandu* involves the vitiation of *Pitta Dosh*, which leads to the destruction or impairment of *Rakta Dhatu* (blood tissue). This disturbance affects the body's ability to maintain proper coloration, strength, and vitality. *Ayurveda* recognizes various causes for *Pandu*, including excessive consumption of sour, salty, and pungent foods, mental stress, and indulgence in incompatible food combinations (*Viruddha Ahara*).

Management of *Pandu Roga* traditionally includes both *Shodhana* (purification therapies) and *Shamana* (palliative treatments), with an emphasis on *Deepana-Pachana* (digestive fire correction), *Rasayana* (rejuvenation), and iron-rich herbal formulations like *Lauha Bhasma*, *Punarnava Mandura*, and *Navayas Lauh*. Dietary modifications and lifestyle adjustments are also critical components of the treatment plan. Ayurvedic interventions show promising results, especially in cases where synthetic iron supplements cause gastrointestinal side effects or are not well tolerated. Herbal formulations not only improve hemoglobin levels but also support digestion and overall vitality, offering a systemic benefit beyond symptom control.

Conclusion

Pandu Roga, a well-documented condition in Ayurveda, reflects a deep understanding of systemic imbalances that manifest as pallor, fatigue, and general debility - closely aligning with the clinical features of Anemia in modern medicine. Ayurvedic texts provide a comprehensive framework for its diagnosis, pathogenesis, and treatment, rooted in the principles of *Dosha, Dhatu*, and *Agni*.

The holistic approach of Ayurveda - encompassing herbal medications, dietary regulation, lifestyle modification, and detoxification therapies - offers a personalized and sustainable method for managing *Pandu*. Herbal formulations like *Lauha Bhasma* and *Punarnava Mandura* have shown promising results,

Not only in improving haemoglobin levels but also in enhancing overall vitality and quality of life. Therefore, a physician must have complete knowledge of different aspects of *Pandu Roga* like *Vyutpatti*, *Nirukti*, *Paribhasha*, *Paryaya*, *Prakara*, *Nidana*, *Poorvaroopa*, *Roopa*, *Samprapti*, *Sadhyaasadhyatwa*, *Chikitsa*, *Pathyaapathya* from various Ayurvedic texts and other literatures for better management of patients.

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