A Review Article on Pandu with special reference to Anaemia

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Abstract: Pandu Roga is one of the diseases mentioned in Ayurveda, which is one of the “Varnopalakshita Roga” i.e., a disease characterized by the change in colour to white (Shweta), yellowish (Peeta), greenish (Harita). The clinical condition of Pandu in Ayurveda can be co-related with Anaemia described in Modern Medical Science, due to the resemblance in the clinical signs and symptoms. In Modern Medicine, Pandu is a pale appearance which may be due to the decreased blood supply to the skin or decreased visibility of oxyhemoglobin. Anaemia is a major global public health problem and the most prevalent nutritional deficiency disorder in the world. This article presents the Ayurvedic concept of Pandu Roga (Anaemia).

KEY WORDS: Pandu, Vyadhi, Srotas, Anaemia, Pallor

INTRODUCTION

Ayurveda is the science of life that is focused on the maintenance of positive health in healthy and eradication of ailments in diseased through its holistic approach, lifestyle practices, dietary habits, and safer medications. Malnutrition either due to inadequate dietary intake or lack of balanced diet and population explosion in today's world has led to the development of various diseases and Pandu Roga is one of such diseases. Ayurveda described Pandu as Pitta Pradhana Vyadhi associated with Rasa and Rakta Dhatu. Dhatu nourishment mainly affects disease due to Pitta Prakopaka Ahara [1] Pandu Roga is one of the Varnopalakshita Roga mentioned in Ayurveda characterized by the changes in the skin colour to white (Shweta), yellowish (Peeta), greenish (Harita) etc. [2] Acharya Charak and Vagbhata accepted Pandu Roga as a disease of Rasavaha Srotas, while according to Sushruta it is of Raktavaha Srotas [3]

Pandu Roga is characterized by the paleness of the body which may be due to reduced blood flow and oxygen or by a decreased number of red blood cells and anaemia is one of the most common causes of paleness, so Pandu Roga can be correlated with Anaemia [4] Anaemia refers to a state in which the level of haemoglobin in the blood is below the reference range appropriate for age and sex [5] Anaemia is a major global public health problem having an influence on health as well as social and economic development affecting both developing and developed countries. [6] Anaemia is the most prevalent nutritional deficiency disorder in the world [7] Globally, Anaemia affects 1.62 billion people, which corresponds to 24.8% of the population. [8] In India, Anaemia affects an estimated 50% of the population. [9] In Ayurveda concept of Pandu is abundantly and mentioned in various literature.

The knowledge of this concept is very beneficial to treat different disorders where Pandu is a symptom and disease itself.

This article presents the Ayurvedic concept of Pandu Roga (Anaemia). Hence, in this article attempt has been made to review various available Samhita, Samgrahagrantha to find out the different descriptions about Pandu and bring all of them in a single place.

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

MATERIAL AND METHOD:

Material has been collected from ancient Ayurvedic texts, Research Journals, and electronic databases.
REVIEW OF LITERATURE:

VYUTPATTI: The word Pandu is derived from ‘Padi Nashane’ Dhatu by adding ‘Ku Pratyaya to it, the meaning of which is always taken in the sense of Nashana and as Pandu has been kept under the group which is classified and named according to the change in colour. [10]

NIRUKTI OF PANDU:
1. According to Shabdarnava Kosh ‘Pandustu Peetbhagardh Ketaki Dhulisannibham’ means Pandu is like the colour of pollen grains of Ketaki flower which is whitish yellow. [11]
2. ‘Pandutwenuplakshito Rogah Pandu Rogah’ means the disease which resembles Pandu Varna is known as Pandu [12]

DEFINITION OF PANDU: [13]
Sarveshu Chaiteshvih Pandubhavo Yatoadhikoatah Khalu Pandurogah. (Su.Ut. 44/4) It is called Pandu Roga because of the predominance of paleness all over the body.

SYNONYMS: According to Shushrut Kamala, Panki, Laghrak, Alas and Kumbhahwa are the synonyms of Pandu. [14] In Rigveda and Atharvaveda Pandu has been described by the name of Vilohita, Halima and Haribha. [15]

TYPES OF PANDU ROGA
Acharya Charak described the disease under five categories namely Vataja, Pittaja, Kaphaja, Sannipataja and Mridabhakshanajanya [16] and Acharya Susrutha has accepted only four types of Pandu excluding Mridabhakshanjanya Pandu [17], they are: 1. Vata Pandu 2. Pitta Pandu 3. Kapha Pandu 4. Sanipataj Pandu

ACHARYA HARITA mentioned eight types of Pandu in Harita Samhita and described Kamla, Kumbhakmla, Halimaka as their Synonyms. [18]

SAMANYA NIDANA (CAUSATIVE FACTORS): [19],[20]
The etiological factors of Pandu Roga mentioned in Charaka, Sushruta and other Samhitas can be broadly classified into 3 groups. (Charaka Chikitsa 16/8; Sushruta Uttarsthan 44/3) 1. Aharaj Nidana. 2. Viharaj Nidana. 3. Mansik Nidana. 4. Other diseases i.e., Nidanarthaka Roga.

1) Aharaj Nidana - Food or diet plays an important role in the normal development and maintenance of different Dhatus as well as in the vitiation of Dosha.
   • Excess intake of kshaar (alkaline), amla (sour), lavan (salt), ushna (hot) and teekshna (penetrating) Ahaar.
   • The food/Ahara which is virudhha (incompatibles) and asatmya (unwholesome)
   • Intake of Nishpav, Masha, Pinyak and Til Tail in excess.
   • Excess consumption of wine (Madya), eating mud (Mrida) and Mridu Ahaar
2) Viharaj Nidana:  
   • Excessive Diwaswapan, Vyayama and Maithun.
   • Pratikarma Vaishamya (faulty administration of Panchakarma) and Ritu Vaishamya—(faulty management of seasonal regimen)
   • Suppression of natural urge (Vega Dharan)
3) Mansik Nidana:  
   • Mansik nidan i.e., anxiety, fear, anger, and grief have a major role in the manifestation of Pandu.
4) Other /Secondary/Nidanarthaka causes – In Ayurvedic literature there is an indication of a correlation between various diseases and Pandu Roga either as a symptom or as Upadrava. So, all these can be causes of Pandu i.e., Nidanarthaka Roga of Pandu. E.g., Raktaipravartana, Raktaarsha, Raktabuda, Asrigdara or Raktrapradara, Rajyakshama, Punaravartaka Jwara etc. which can directly or indirectly vitiate Vata-Pitta Dosha singly or in combination and manifest as Pandu Roga

PURVARUPA (PREMONITORY SYMPTOMS):
According to Acharya Charak: [21] 
Tasya Lingam Bhavishyat hridayasparpanam roshyam swedabhavah shrismatathah. (Ch. Chi. 16/12) 
Hridayasparpanam (Palpitation), roshyam (dryness of the skin), swedabhavah (absence of sweating), shrismatathah (fatigue)

According to Acharya Sushruta [22]
Twakshopotam Shthevangatrasaddo Mridbhakshanam Prekshankootsothah. Vidmutripitawmahatvaipaka Bhavishtasya Paruhsarani. (Su. U. 44/5)
Twaksphotnam (cracking of skin), Shthevan (salivation), Gaturasada (sense of lassitude in the limbs), Mridbhakshanam (liking for mud intake), Prekshankootsoththah (swelling over eye socket), Vid-Mutra Pitata (yellow colour of stool-urine), Avipaka (Indigestion) these are mentioned by Sushruta.

**RUPA (SYMPTOMS):**

Acharya Charak has mentioned the Samanya and Vishesh rupa of Pando Roga in chapter 16 of Chikitsa Sthaan according to the Doshia involvement which is mentioned below.

**Samanya Rupa:** [23]

- Loss of Indriye Bala, Tej, Veerya and Oja.
- Loss of Bala, Varma and Agni (power of digestion).
- Karnashveda (tinnitus), Durbalaya (general weakness), Annadwesha (aversion towards food), Shrama (fatigue), Bhramanipidita (giddiness), Gatrashula (body ache), Jwara (fever), Shwasa (breathlessness), Gaurva (heaviness), Aruchi (anorexia).
- Akshikatashoth (swelling over orbit), Shirnaloma (hair fall), Hataprabha (body complexion become greenish).
- Kopana (dislikes cold things), Nidralu (feeling of drowsiness), Alpawaka (avoid speaking), Shtheevan (spitting frequently).
- Pindikodwethhana (calf muscle pain), Katiuru Paad Raka (pain and weakness in the lumbar, thighs and feet), Arohaneayasa (patient feels exhausted on climbing).

**VISHISHTA RUPA:**

Acharya Charaka had classified Pando Roga into 5 types; based on these types Vishesh Rupas are described. [24],[25]

1. Vataj Pando: - Krishna-Panduta (black and pale yellow discolouration), Rukshata (roughness), Aruna-Angatam (Reddishness of the body), Angpadra (body ache), Ruja (pain), Todra (Pricking type of pain), Kampa (tremor), Parshvashiroruja (Reddishness of the body), Arohaneayasa (frequently).
2. Pittaja Pando: - Pita-Haritadhata (complexion become either yellow or green), Jwara, Daha (burning sensation), Trishna (excessive thirst), Murchha (fainting), Pipasa, Pitamutrasahakrata (yellowish discolouration of urine and stool), Sweda (profuse sweating), Sheetakantam (increase desire to take cold things), Katukasayta (feeling pungent taste in mouth), Ushnaamulanupashyata (uneasiness for hot and sour things), Vidahe vidagadhe Anne (feeling of burning sensation during indigestion of food), Daungandhiya (foul smell of body), Daurbalya (weakness), Bhinnvarcha (diarrhea).
3. Kaphaja Pando: - Gaurava (breviness), Tandra (Drowsiness), Chhardi, Shvetavbhatta (whitish complexion), Praseka (excessive salivation), Lomoharsha (Horripilation), Murchha (Fainting), Bhrama (giddiness), Kama (mental fatigue), Sada (looseness of body parts), Kasa, Shwasa (dyspnoea), Alasya (laziness), Aruchi (anorexia), Vaka-swaragbraha (obstruction of speech and voice), Shukla Mutra-Akshivarchas (whitish discoulouration of urine, eye and stool), Katarakshoshna Kamta (feeling to take pungent, hot and dry things), Shwayathyu, Madhuryasyata (sweetishness in mouth).
4. Tridosha Pando: - Sign and symptoms of all the three vitiated Doshas are present, and this is extremely intolerable because of developing complications.
5. Mridbhakshanajanya Pando: - Bala-Varna-Agni Nash (loss of strength, complexion, and power of digestion metabolism), Ganda-Akshikuta-BhraPat-Nabhi-Mehan Shotta (oedema on cheek, eye socket, eyebrow, feet, umbilical region, genital parts), Krmi Koshta (Appearance of intestinal worm), Atisayet Mala Sasrika Kapha (diarrhoea associated with blood and mucus).

**SAMPRAPTI (PATHOGENESIS)** [26]

Acharya Charaka has mentioned the Sampapiti of Pando in Chikitsa Sthian. According to him, due to consumption of Nidana, Pitta located in the Hridaya (Sadhak Pitta) getsagrivated and being expelled from Hridaya by powerful Vata and it enters the Dash Dhamanyaa (attached to the heart) and circulates all over the body. This aggravated Pitta reaches the space between skin and muscle tissue and brings vitiation in Kapha, Vata, Asrika, Twaka and Mamsa. This leading to abnormal types of colouration like Pando, Haridra and Harita to the skin.

**SAMPRAPTI GHATAKA:** [27]

- Dosha – Pitta Pradhan Tridoshaja
- Pitta - Sadhaka, Ranjaka and Bhrajaaka
- Kapha – Avalambaka, Kledaka
- Vayana- Vyan Vaya
- Dushya - Twaka, Rasa, Rakta, Mamsa and Meda.
- Strotas – Rasavaha, Raktavaha
- Strotol Dushti - Sanga and Vimarga Gamanam.
- Agni - Jatharagni and Dhatvagni.
- Agni Dushti - Mandagni
- Udghavasthaan - Amashaya
SADHYA-ASADHYATVA:

Patient of persistence chronic Pandu Roga whose Dhatu gets Khar does not cure. Also develops oedema observes all the objects yellowish in colour. Sharir Dhatu becomes Ruksha and a decrease in Bala and Varna occurs and Shotha develops. Rogi suffers from constipation and passes loose stools with mucus having greenish discolouration and becomes Deena, suffers from Murcha and Trustha. [28]

CHIKITSA:

According to Acharya Charak [29]

Tatra Panduvamya Śnigdhateekshaundhaarandhanumolekha Sansodhno Mriduvitiktee Kaamlī Tu Viraichhe (Ch.Ch.16/40)

According to Acharya Charak in Sadhya Pandu Rog, Teekshna Vaman and Virechan should be done.

According to Acharya Shrshruta: [30]

Harechha Doshan Bahushoapramatrach Shvayedhhi Doshesvinirharatesu (Su. Ut.44/22)

Means in Pandu Roga, Doshinha which get situated in Dhatus, Srotas and Ashayas should be removed by Vaman and Virechan repeatedly if not done so then these Doshas cause Shotha in the different body part. Snehana Karma: in Pandu Rogi there is Sneha- Abhava (deficiency) and the Doshas get adhered to Shakhsh thereforne Snehan is essential to bring the Doshas in Koshta and correct Rukshata. In Pandu Rogi both Bahya and Abhyantara Snehana are indicated. For Abhyantara Snehana Acharya Charak indicated some medicated Ghee i.e., Panchagavyaghrit, Mahatiktakah Ghr, and Kalyanak Ghr, etc. Vaman and Virechana Karma: Samyaka Snehan and Svedana bring the Doshas into Koshta and by the action of Vaman or Virechana Karma they are expelled out of the body by their action. Virechana is considered as best Shodhanopakrama for Pitta Doshha. So, Virechana is most suitable in Pandu Roga.

Shamana Chikitsa:

- Vishesha chikitsa:
  - In Vatika Pandu Snigdhya Guna Pradhan Aushadha are to be used internally.
  - In Pittaja Pandu Tikta Rasa and Shitaveerya Pradhan Aushadha are to be used internally.
  - In Kaphaja Pandu Kati-Tikta Rasi Yakta and Ushna Veerya Pradhan Aushadha are to be used internally.
  - In Sannipataja Pandu Mishrit Guna Aushadha are to be used internally.
  - In Pandu Poga Vanaspatika and Khanija Yoga, Asava Arishta, Avaleha, Churna Yoga, Vati Yoga are used.

MIRDHAKSHANA PANDU:

The ingested soil should be removed from the body by Tikshna Sansodhan (Vaman and Virechana) by evaluating the Shāririk and Agni Bala of Rogi. After the Shodhana when the soil gets out of the body then Agniwardhak and Balwardhak medicated Ghr should be used to bring strength to the body.

UPADRVA:

According to Acharya Sushruta Aruchi, Pipasa, Vaman, Jwara, Murdharija, Agnisada Shopha, Kanthagata Abalatwa, Murechha, Klama and Hirudayapindana are the Updrava of Pandu Roga. [31]

PATHYA-APATHYA

Pathydhara: According to Acharya Charak; [32]

- Shalianna, Yava, Godhoom mixed with Yusha prepared from Mudga, Adhaki and Masur
- Jangal Mamsa Rasa
- Panchagavyaghrit, Mahatiktakah Ghr and Kalyanaka Ghr used for Snehan Karma. According to Acharya Susruta: [33]
- Pandu Rogi must use Arishtha prepared from Guda, Sharkara (sugar) and Shahad (honey)
- Asava prepared from Matra and Kayshara should be used
- Jangala Mamsa Rasa added with Sneha (fat) and Amalaka Swaras should be used

- Apathydhara: In Bhaisajya Ratnavali following Apathy Aahar are mentioned [34]
  - Rakta Sruuti, Dhoopman, Vaman Vega Dharan, Swedan and Matahoon are to be avoided by Pandu Rogi.
  - Avoid consumption of Shinibi, Patrashak, Ramath, Masha, Ambupaan, Pindyak, Tambul, Sarshapa, and Sura.
  - Intake of water of rivers like those originating from Vindhya and Sahyadri Mountain.
  - All types of salt, sour edibles, Virudhiha Anna (incompatible foods), food that is Guru (heavy to digest) and Vidahi (cause a burning sensation).

ARISHTA LAKSHANA

Acharya Sushruta mentioned fatal signs and symptoms of Pandu Roga in Sutra Sthana (S.Su.33/23), which are [35]

- Pandu Dhantnakha • Pandu Netra • Pandu Shangtadarshi
**DISCUSSION**

*Pandu Roga* is *Pitta pradhan vyadhi*. *Pitta* is responsible for the normal colour of the body but when it gets vitiated, *Pandu* (Pallor) occurs. Though *Pitta* is Pradhan Dosha in *Pandu Roga*, *Vata Dosha* also plays a crucial role in the manifestation of *Pandu Roga*, mainly *Vyana Vayu* has a relation with *Samprapti* of *Pandu Roga*. *Pandu* is a Rasavaha Srotas Vyadhi from which a lot of people suffer. In Samhitas most of the Acharyas have described five types of *Pandu Roga*, i.e., *Vatika*, *Paittika*, *Kaphaja*, *Tridoshaja* and *Mriddhakshhanajanya Pandu*. The daily faulty routine activity related to mental or physical, faulty dietary habits like *Mridikabhakshana*, taking food deficient in quality and quantity, *Nidanarthaka Roga* is some etiological agents of *Pandu Roga*. Acharya Charaka mentioned three premonitory Symptoms of *Pandu Roga* i.e., *Hridyaspandanam*, *Rokshyam* and *Shram* which indicate its future presence. Also, in Charak Samhita Samanya and Visheshrupa of *Pandu Roga* is mentioned. *Pandu* is Sadyha Roga but in later stages, due to chronicity, it develops some complications. Hence, it is necessary to treat it in the early stage. According to Acharya Charak in Sadyha Pandu Rog medicated *Teeksha Vaman* and *Virechan* should be done. For a complete knowledge of *Pandu Roga* by different Samhitas.

**CONCLUSION**

Now a day, numbers of patients suffering from *Pandu Vyadhi* are seen due to modern lifestyle, improper dietary habits in routine and the use of modern medicines. *Pandu* is a *Varnopalkshita* and *Pitta Pradhan Vyadhi* which is responsible for the normal colour of the body. *Pandu* can be correlated with Anaemia. In Ayurvedic literature vast description of *Pandu Roga* and *Chikitsa* is given. To treat a *Pandu Rogi*, a physician must have complete knowledge of different aspects of *Pandu* like *Nidan*, *Roopa*, *Poorvaroopa*, *Samprapti*, and several *Chikitsa Yoga*, *Sadhyasadhita*, *Arishtalakshan* etc. from all Samithas, *Nighantu*, and other literature.

**REFERENCES**

22. Sushruta, A. Shastri, Sushruta Samhita, Ayurvedatatva Sandipika Hindi commentary, Uttarantra 44/5, Chakhambbha Bharti Academy, Varanasi, Reprint 2013, p.366
34. Shastri Ambikadatta; Bhaisajyaratnavali Vidhyotni Hindi Commentary Chaukhamba Sanskrit Sansthan Varanasi Chapter, 12 P-277

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