

**SPECIAL APPRAISAL ON PANDU (ANAEMIA) AND ITS PHYSIOLOGICAL ASPECT**Sushma Tiwari¹, Chhaya Gupta²

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**ABSTRACT**

Pandu Roga is characterized by a group of diseases having the main symptom and it is a Varnopalakshita Vyadhi where paleness is path gnomonic. The main sign of *panduroga* is Raktalpata. Pandu is a clinical condition characterized by whitish-yellow discoloration of the skin, eyes, nails, etc. The person with this disease suffers from decreased blood amount, strength, and complexion. He becomes insipid i.e., Nihsar (loss of natural integrity, tone, and strength of Dhatus). Anemia is the most common indicator used to screen for iron deficiency, the terms anaemia, iron deficiency, and iron deficiency anaemia are sometimes used interchangeably. Iron deficiency anaemia would be considered a public health problem only when the prevalence of hemoglobin concentration exceeds 5.0% of the population. The prevalence of iron deficiency anaemia in a population is, therefore, a statistical rather than a physiological concept, although it reflects the proportion of the population that has iron-deficient erythropoietin. As iron deficiency has been recognized as the commonest nutritional deficiency disorder and a risk to the nation among the top ten selected health risks, although this deficiency disorder has been described by the name Panduroga thousands of years ago in the Ayurvedic classics. Iron deficiency anaemia is the most common form of anemia among the Indian population especially in pregnant women and Adolescents.

Keywords: Raktalpata, Iron deficiency anemia, Pandu roga.

INTRODUCTION

The sign anaemia has a wide variety of causes. Iron deficiency is considered to be the most common cause of anaemia; other important causes comprise acute and chronic infections that result in inflammation and blood loss; deficiencies of other vitamins and minerals, especially folate, vitamin B12, and vitamin A; and genetically inherited traits, such as thalassemia. Other conditions (e.g., malaria and other infections, genetic disorders, and cancer) can also play a role in anaemia. The terms "iron-deficiency anaemia" and "anaemia" are frequently used synonymously; also, the prevalence of anaemia has often been used as a proxy for iron-deficiency anaemia, though the degree of overlay between the two varies considerably from one population to another, according to gender and age. Anaemia prevalence among pregnant and non-pregnant women is included as primary ending indicator in the center set of indicators for the Global Nutrition Monitoring outline. These indicators are used to monitor development towards achieving Global Nutrition Target 2, which is a 50% reduction in anaemia among women of reproductive age by 2025. Anaemia in women of reproductive age and children is also included in the WHO Global reference list of 100 core health indicators. The word Pandu has been derived from "*Padi Nashne Dhatu*" by adding "*Ku*"Pratyaya in it the meaning of which is always taken in sense of "*Nashan*" i.e the loss. As Pandu has been kept under the group which is classified and named according to the change of color, therefore "*Nashan*" should be considered in the sense of "*Varna*" or color, which is further clarified by Charak with the word *Vaivarna*. Thus, Pandu is a disease in which there is *Vaivarna* or a Change of normal color of the body. Anemia is the most universal form of malnutrition mostly due to deficiency amongst adolescents in the present day. Youth is the most susceptible phase of life associated with high iron requirements for growth and development accompanied by the expansion of blood volume, and muscle mass. Global database by WHO (2000) on child growth and malnutrition and national Family Health Survey-2 (2000) in India, have sug-

gested a high prevalence of IDA (56%) in school-going children. Iron Deficiency Anemia is a disease that has similar paleness, constitutional symptoms, pathogenesis, and etiology. The features of iron deficiency anemia are almost similar to that of Panduroga mentioned in Nakha and Vakthra (face), Agnimandya, Akshikuta Shotha.

Historical background of PanduRoga:

Word *pandu* is described as, white, yellowish white, etc. As told by Amarakosha *pandu* means white colour mixed with a yellow tinge. The *Pandu* is like the color of pollen grains of *Ketaki*- flower, which is whitish yellow. I.e., Acharya Chakrapani has included "*Harit*" Varna in *Pandu*³. *Panduroga* had been mentioned in *Rigveda* and *Atharvaveda* by the name of *Vilohita*, *Halima*, and *Harima* respectively. Kaushika sutra⁵ has described the Intake of cooked rice mixed with *Haridra* and applying the same all over the body as a remedy for this disease is mentioned in this text.

Descriptions of Pandu Roga: Pandu Roga is well and broadly described in all samhitas. *Acharya Charak* has described *Pandu Roga* in *Sutra Sthana* Chapter "*Ashtodariya Adhyaya*" *Pancha pandu Roga* and classification of *pandu roga* is given. "*Santarpaniya Adhyaya*" has mentioned the *Pandu roga* as *santarpanotha vyadhi* "*Chikitsa Prabhratiya Adhyaya*" describes *Samshodhana* in *Pandu roga*. In *Chikitsa Sthana*¹⁰ "*Pandu Roga Chikitsa*" a Complete description of *pandu roga* is given. *Acharya Sushrutahas* described *Pandu Roga* after the chapter "*Hridroga Pratishedha Adhyaya*" because of the similarity in the types of both diseases. *Acharya* has mentioned *Kamala*, *Panaki*, *Kumbhavhaya*, and *Lagharak* as the various stages of *Pandu*. *Acharya* has also mentioned *Pandu roga* as *Rasa Pradosaja vikaras*. *Acharya Vagbhata* has described *Pandu* in *Nidan Sthana* 13th Chapter "*Pandu Roga- Shopha- Visarpa Nidan*", Here a complete description of *pandu roga* is given. In *Chikitsa Sthana* 16th Chapter, "*Pandu Roga Chikitsitam*" *pandu roga Chikitsa* is given. *Acharya Vagbhatthas* mentioned this disease as the disease of diseases like (*Pando Shresthamayah*).

Pandu as a complication: Several diseases have been mentioned in Ayurvedic classics where Pandu has been described as a complication, like- Raktatipravartana, Katik-tarunamvedha, Raktavahidhamiveda, Raktarbuda, Upadrava of Rakta-pitta, Rakta-Pradar, Dhatu-Kshaya (Harit, Trauma to Yakrit- Pliha, Rakta-Srava Excessive intake of *Kshara, Amla, Lavana, Ushna, Viruddha*, and *Asatma* food. Excessive intake of *Nispava, Masha, Pinyaka, Madya, Tila* and *Tila Taila*. Viharaja Nidana: Sleeping during the daytime, exercise, as well as sexual intercourse even before the food, is not properly di-

gested, Improper Sodhana chikitsa, Rituvaishamya, *Vega Vidharana*, and excessive *Vyayama*. Manasika Nidana: Affliction of mind with *Kama, Chinta, Bhaya, Krodha*, and *Shoka* these are common Aaharaja Nidan. *Dosha*: Tridosha with Predominance of *Pitta, Dushya*: Rakta only (Su.) Rakta, Twak, Mamsa. *Srotas*: *Rasavaha, Raktavaha. Srotadusti*: *Sanga. Adhithana*: *Sarva sharigata Twak. Udbhavasthana*: *Hridaya, Sanchara*: Whole body. *Vyakti Sthana*: *Tvak, Roga Marga*: *Madhyama Roga Marga* this regard to Samprapti Ghataka.

Table 2: Showing Clinical features of *Pandu*

S. No.	Symptoms	C.S.	A.H.
1.	Karna Kshevda (Tinnitus)	+	+
2.	Hatnala (Loss of digestion)	+	+
3.	Daurbalayata (Debility)	+	+
4.	Sadana (Malaise)	+	+
5.	Aruchi (Loss of appetite)	+	+
6.	Sharama (Exhaustion)	+	+
7.	Bhrana (Giddiness)	+	+
8.	Shoola (Pain in the body)	+	+
9.	Jwara (Fever)	+	+
10.	Swas (Dyspnoea)	+	+
11.	Gaurava (Heaviness)	+	+
12.	Mardana Vata Pida (Pain like limbs are churned)	+	+
13.	Shoona Akshikoota (Puffiness of the eye & face)	+	+
14.	Harita (Greenish Discolouration of the body)	+	+
15.	Sheena loma (Falling of skin hairs)	+	+
16.	Hatprabha (Loss of luster)	+	+
17.	Kopan (Irritability)	+	+
18.	Shishir dveshi (Aversion to cold)	+	+
19.	Nidraalu (Over Sleepness)	+	+
20.	Stheevana (Spiting)	+	+
21.	Alpvaka (Diminished voice)	+	+
22.	Pindikodveshtana (Cramp in calf muscle)	+	+
23.	Rohenayaas (Lassitude)	+	+
24.	Ojus Kshaya (Loss of Ojus)	-	+
25.	Alpa Rakta (Deficiency of Blood)	-	+
26.	Alpa Meda (Deficiency of Bone Marrow)	-	+
27.	Nisara (Loss of Body lusture)	-	+
28.	Shithila Indriya (Heaviness of Body)	-	+
29.	Hridaya Dravata (Palpitation)	-	+

Upadravas (complications): If the disease is not treated, then the following complications may arise: *Aruchi* (anorexia), *Pipasa* (thirst), *Chardi* (vomiting), *Jwara* (fever), *Murdha Ruja* (headache), *Agnisada* (dyspepsia), *Kanthagata Sotha* (oedema in the throat), *Abalatwa* (weakness), *Murcha* (fainting), *Clam* (fatigueness), *Hridaya Pidana* (cardiac pain).

Arishta Lakshana: *Pandu varna danta, Nakha, netra, and twak, Sopha and Swasa (swasa yukta Sopha), Trishna yukta shoola*, Patients having the dreams of eating pale coloured food, *Pandu varna Adhikya, Adhika Krishata, Trushna, Kupitha uchwas and Dambhari (Stabdha netra)*.

Sadhya Asadhyata (prognosis) of Pandu: The disease without any Upadravas, or Arishta Lakshanas, newly manifested and in which more than one dosa is involved is Sukha sadhya. The term Asadhya denotes a bad prognosis of a disease. The signs, symptoms, and other conditions indicating incurability of *Panduroga* are as follows: When the disease becomes chronic (*Chirotpanna*), when excessive roughness has appeared in the patient (*Kharibhuto*), when the patient has developed oedema owing to chronicles of this disease (*Kalapakarshatshuno*), when the patient gets yellow vision (*Pitani Pashyati*), when the patient is fully or partially constipated (*Baddha Alpa Vitaka*), when the patient passes loose stool, which is green in colour and mixed with mucus (*Sakapha Harita Atisara*), when the patient has A noxious expression (*Deena*). The body is exceedingly white as if be smeared (*Shwetatidigdhangha*). The patient is exceedingly afflicted with vomiting (*Chardi*), fainting (*Murcha*), and thirst (*Trishna*). The patient becomes pale on account of loss of blood (*Asrikakshaya*) these are the extreme worst sign and symptoms of Pandu and patients may die soon after the appearance of these characters.

Chikitsa Sutra of Pandu: Patients of *Panduroga* should be treated as *Nidana Parivarjana, Snehana, Shodhana, and Shamana*, however, *snehana* is contraindicated in Pandu since it is *Pitta pradhana vyadhi*. *Vamana* is contraindicated in *Pandu*. There is a necessity to remove the clay ingested which may be composed of various indigestible and unassimilable

substances. Many herbal and mineral origin drugs are indicated in *pandu roga chikitsa*. Some are as follows: *Navayasa churna, Mandura vataka, Punarnava Mandura and Mrithikajanya Pandu treated by Agnimukha Rasa*. Pathya diets are used in *pandu* is Rice prepared by old Shali, food prepared by old Yava and Godhuma should be prescribed with Yusha of Mudga, Masura, and *Mamsa*. A Mantha prepared by Dhatri phala *Rasa* or *Ikshu Rasa*, mixed with Shaktu and *Madhu* should be prescribed. Food which causes reduction of *Raktadhatu* and vitiation of *Pitta*. Excessive *Vyayama, Maithuna, Atapasevana*. The affliction of mind by *Krodha, Shokais Apathya*.

The physiological aspect of Pandu (Anemia)

Definition: Anemia is defined as a reduction in the oxygen transport capacity of the blood, below normal limits of the total circulating red cell, below normal in the volume of packed red cells, and a reduction in the hemoglobin concentration of the blood. Anemia is the most common form of undernourishment mostly due to deficiency amongst adolescents today. It is of public health issue in our country, with anemia incidence being > 30%. Adolescents (10-19 yrs) comprise more than 20% of our population in India and >50 suffer from IDA. Adolescence is the most susceptible stage of life allied with high iron requirements for growth and development.

Signs and Symptoms of Iron Deficiency: A Cardinal rule is that the appearance of Iron deficiency in an adult male means gastrointestinal blood loss until proven otherwise. Signs related to iron deficiency depend on the severity and chronicity of the anemia in addition to the usual signs of anemia. Iron deficiency anemia is more common in women between the age of 20 and 45 years than in men; during periods of active growth in infancy, childhood, and adolescence; and is also more frequent in premature infants. Too little iron can impair body functions, but no clinical abnormalities appeared at early stages subsequently, in addition to features of underlying disorder causing anemia, the clinical features of Iron deficiency anemia are manifested in two ways: Onset of Iron deficiency anemia is generally slow. The usual symptoms are weakness, fatigue, angina and CCF

in older patients, and dyspnoea on exertion. menorrhagia in women, palpitation, Pallor of skin, mucous membranes, and sclera are Epithelial tissue changes

DISCUSSION

As Pandu has been kept under the group which is classified and named according to the change of color, therefore "Nashan" should be considered in the sense of "Varna" or color, which is further clarified by Charak with the word *Vaivarna*. Thus, Pandu is a disease in which there is *Vaivarna* or a Change of normal color of the body. There are many diseases where Pandu has been described as a sign or symptom by different Acharyas - *Punaravartaka Jwara, Jirna Jwara, Grahani, Arsha, Krimi, Rakta-Pitta, Asragdar, Plihodar, Yakritdaludar, Dushayodar, Raktarbuda, Shosha, Pittaj Pratishyaya, Pittaj Kasa, Antar Mrita Shishu, Rewati Graha, Shukra Kshaya, Bijopaghat, Pittaj Dusta Stanya, Pittaj Prameha, Mansamarmobhigat, Shoth, Pakvashayagata Visha, Akhu-Visha, Rajimant Sarpadansh, Rasadoshaj Vikar, Raktagata Kapha, Rakta Gulma*. In 1554, Han Lounji described the disease by the name "Colorosis". In the 17th century. A.D. application of the name of anaemia was started. In 1829, it was defined clearly with a specific definition. Iron deficiency is the most common nutritional deficiency throughout the world and the leading cause of anemia in the United States. Sometimes it can be hard for them to get enough iron from their normal diet. Women who are pregnant have higher iron needs. To get enough, most women must take an iron supplement as recommended by their healthcare provider. When loss of blood occurs, iron is also lost. Here extra iron is needed to replace the losses. Increased blood loss can occur with heavy menstrual periods, frequent blood donation, as well as with some stomach and intestinal conditions (food sensitivity, hookworms.) The management of iron deficiency anaemia consists of two essential principles: Correction of disorder causing the anemia and correction of the underlying cause of iron deficiency is established after a thorough check-up and investigation. Appropriate surgical, medical, or preventive measures are instituted to correct the

cause of blood loss. Iron deficiency responds very effectively to the administration of oral iron salts.

CONCLUSION

Pandu. Pandu Roga is a group of diseases characterized by a group of diseases having the main symptom pandu, the main sign of Pandu roga is Raktalpata. Anemia is also a very common problem among Indian pregnant women and a woman living with low socioeconomic status. Pandu is a clinical condition characterized by whitish-yellow discoloration of the skin, eyes, nails, etc. The person with this disease suffers from decreased blood amount, strength, and complexion. He becomes insipid i.e., Nihsar (loss of natural integrity, tone, and strength of Dhatus), and its aspect is broadly described in this paper. Contemporary modern science Iron deficiency is a condition resulting from too little iron in the body. It ranges from depleted iron stores without functional or health impairment to iron deficiency with anemia, which affects the functioning of several organ systems. Many common conditions can cause people to need additional iron: Because of their rapid growth, infants and toddlers need more iron than older children.

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