

**PANDU ROGA IN CHILDREN W.S.R. TO IRON DEFICIENCY ANEMIA**Dr. Mandeep Kaur\*<sup>1</sup> and Prof. (Dr.) Keerti Verma<sup>2</sup><sup>1</sup>M.D. Scholar (1<sup>st</sup> Year), Department of Kaumarbhritya, Rishikul Campus, UAU, Haridwar, Uttarakhand, India.<sup>2</sup>Prof. & HOD, Department of Kaumarbhritya, Rishikul Campus, UAU, Haridwar, Uttarakhand, India.**\*Corresponding Author: Dr. Mandeep Kaur**M.D. Scholar (1<sup>st</sup> Year), Department of Kaumarbhritya, Rishikul Campus, UAU, Haridwar, Uttarakhand, India.

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**ABSTRACT**

In *Ayurveda*, *Pandu Roga* is the pallor on the skin which occurs due to quantitative and qualitative deficiency of *Rakta dhatu* caused either in the form of deficiency of haemoglobin and /or red blood cells. *Pandu Roga* is characterised by discoloration of skin to *sweta*, *pita* and *harita* or presence of *Ketaki dhuli nibha chaya*. It is characterised as "*Varnopalakshita Roga*". Considering *panduta* as the predominant sign, disease is termed as *Pandu Roga*. Nearest correlation of *Pandu* can be made with Iron deficiency anemia because of predominance of *panduta* or pallor in the body. *Mandagni* is the main cause for *Pandu Roga*. Anemia is reduction of red blood cell volume or haemoglobin concentration below the range of values occurring in healthy persons. Most common cause of iron deficiency in children include insufficient nutrition intake together with rapid growth, low birth weight and gastrointestinal losses related to excessive intake of cow's milk. WHO estimates that anemia accounts for one quarter of the world's population and is concentrated within pre-school age children and women. Anemia ranges from 45-65% in children. Clinical manifestation of the disease include pallor, fatigue, loss of appetite, palpitations, irritability, weakness, dyspnea, brittle nails, pica, headache, Main objective of the treatment, according to *Ayurveda* is correcting and balancing *Agni*, by which metabolism can be regulated properly.

**KEYWORDS:** *Pandu Roga*, haemoglobin, Iron deficiency anemia, *mandagni*.**INTRODUCTION**

*Pandu Roga* is a disease described in *Ayurveda* since ancient times, the first reference being found in *Vedas*. In *Rigveda* and *Atharvaveda*, *Pandu* has been described by the name of *Vilohita*, *Halima* and *Harima* whereas in *Sushruta* by *Panaki*, *Laghavaka* and *kumbhahwa*.<sup>[1]</sup> *Pandu Roga* is characterized by the changes in skin color to white (*sweta*), yellowish (*pita*), greenish (*harita*). It is one of the "*Varnopalakshita Roga*" i.e. disease characterized by change in color. *Pandu* is described as white color mixed with yellowish tinge by *Amarkosha*.<sup>[2]</sup> Mixture of white and yellow color which resembles with the pollen grains of *Ketaki* flowers by *Vachaspatya*.<sup>[3]</sup> *Acharya Charak* described the prodromal symptoms of disease include palpitations, dryness of skin and mucosal surfaces, loss of sweating and malaise. The clinical features of the disease include pallor in the eyes, loss of appetite, periorbital edema, tinnitus and malaise.<sup>[4]</sup> Due to predominance of *panduta* (pallor) all over the body, disease can be co-related with anemia in modern science. Anemia is a condition when the haemoglobin level is more than two standard deviations below the mean for child's age and sex.<sup>[5]</sup> Anemia resulting from lack of sufficient iron for synthesis of haemoglobin is the most common haematological disease of infancy and

childhood.<sup>[6]</sup> The prevalence of anemia in developing countries is 39% in children below 5 years of age, and 48% in children between 5-14 years of age group.<sup>[7]</sup> In developing countries like India, because of population explosion, poor economic status, lower hygiene & sanitation care, children are more prone to various infections, parasitic infestations & nutritional disorders.<sup>[8]</sup> *Ayurveda* described *Pandu* as *Pitta Pradhan Vyadhi* associated with *Rasa* and *Rakta Dhatu*. Disease involves lack of *Dhatu* nourishment due to *Pitta prakopaka ahara* intake. Vitiating *doshas* affect *Twak* and *Mamsa* which leads to *Pandu* and *Haridra varna* of skin.<sup>[9-10]</sup> Pathologically disease involves *Agnimandhya* that leads to decrease in *Abhyavaharana shakti*, *Jaranashakti* and *Kayagni*. As a result there is formation of immature *dhatu* and malnutrition occurs due to impaired *Kayagni* along with *Varnahani*, *Prabhahani*, *Utsahahani* and *Krishata*.<sup>[10-12]</sup>

**Causes Of Pandu Roga**

<b>AAHARAJ NIDANA</b>	<b>CH.S.</b>	<b>SU.S.</b>	<b>A.H.</b>	<b>MA.N.</b>
<i>Amla, Lavana Rasa</i>	+	+	+	+
<i>Atiushana</i>	+	-	-	-
<i>Virudhasana</i>	+	-	-	-
<i>Atitikshana</i>	+	+	+	+
<i>Asatmaya Bhojana</i>	+	-	-	-
<i>Nishpav, Mash, Pinyaak Sevana</i>	+	-	-	-
<i>Vidagdha Anna Sevana</i>	+	-	-	-

<b>VIHARAJA NIDANA</b>	<b>CH.S.</b>	<b>SU.S.</b>	<b>A.H.</b>	<b>MA.N.</b>
<i>Divaswapna</i>	+	+	+	+
<i>Ativyayama</i>	+	+	+	+
<i>Vegdharana</i>	+	-	+	-
<i>Pratikarma</i>	+	-	-	-
<i>Ritu Veshymata</i>	+	-	-	-
<i>Mansika Nidana- Chinta, Bheya, Krodha</i>	+	-	-	-

**Types of Pandu Roga**

- *Vataj Pandu*
- *Pittaj Pandu*
- *Kaphaj Pandu*
- *Sannipataj Pandu*
- *Mridbhakshanjanya Pandu*

**Poorvarooopa of Pandu roga<sup>[13]</sup>**

- *Hridyaspandanam* (Palpitations)
- *Rukshata* (Dryness)
- Loss of sweating
- Breathlessness

**Roopa of Pandu Roga<sup>[14-17]</sup>****Vataja Pandu**

<b>LAKSHANA</b>	<b>CH.S.</b>	<b>SU.S.</b>	<b>A.H.</b>	<b>MA.N.</b>
<i>Krishna Pandu twaka</i>	+	+	+	+
<i>Shiroruka</i>	+	-	+	-
<i>Angamarda</i>	+	-	-	-
<i>Kampa</i>	+	-	+	+
<i>Aasyaverasya</i>	+	-	+	-
<i>Balakshaya</i>	+	-	+	-
<i>Bhrama</i>	+	-	+	+

**Pittaja Pandu**

<b>LAKSHANA</b>	<b>CH.S.</b>	<b>SU.S.</b>	<b>A.H.</b>	<b>MA.N.</b>
<i>Peeta Gatra</i>	+	+	+	+
<i>Jwara, Daha, Trushna</i>	+	+	+	+
<i>Sweda</i>	+	-	+	-
<i>Amloudgara</i>	+	-	+	-
<i>Bhinna Varcha</i>	+	-	+	-
<i>Murchha</i>	+	-	+	-
<i>Katuvakrata</i>	+	+	-	-

**Kaphaja Pandu**

<b>LAKSHANA</b>	<b>CH.S.</b>	<b>SU.S.</b>	<b>A.H.</b>	<b>MA.N.</b>
<i>Shukla Netra</i>	+	+	-	+
<i>Chhardi</i>	+	+	-	-
<i>Romaharsha</i>	+	-	+	-
<i>Aalasya</i>	+	-	+	+
<i>Gaurava</i>	+	-	-	+
<i>Praseka</i>	+	-	-	+
<i>Saada</i>	+	-	-	-

**Mridbhakshanjanya Pandu**

LAKSHANA	CHARAK	VAGBHATA	MADHAV
Akshikoota shotha	+	-	-
Asya shotha	+	+	+
Arsha	-	-	+
Atisara	-	-	+
Bala kshaya	+	-	-
Krimi koshtha	+	-	-
Nabhi shotha	+	-	-
Purisha skapha	+	+	+
Purisha skrimi	-	+	-
Pada shotha	+	+	+

**Samprapati of Pandu Roga**<sup>[18]</sup>

Due to *Nidana*, *Pitta dosha* gets vitiated and expelled by *Vayu*. It then reaches the *Hridya* and from there it mobilizes into entire body via *Dashadhamani* and get localized between *Twaka* and *Mamsa* causing *Dhatu shaithayata* and *Guruta*. Vitiated *kapha*, *Vata*, *Asruk*, *Twaka* and *Mamsa* cause *Twakavaivarnata* such as *Pandu*, *Haridra*, *Harita*, etc. There are systemic symptoms like Exertion dyspnea, tiredness, breathlessness, leg cramps, etc. In *ayurvedic* classics, this diseased condition is known as *Pandu Roga*.

**Treatment of Pandu Roga**<sup>[19]</sup>

“*Tatra Panduvyamai Snigdhashtikshna Urdhava Anulomika*”

1. *Shodhana*
2. *Shamana*

**Shodhana Chikitsa**

1. Before starting the *Shodhana Karma*, first step is *Snehana karma*.
2. In *Shodhana karma* of *Pandu*, *Vamana* and *Virechana* is done by *Snigdha* & *Tikshana Dravyas*.
3. *Madanphala* is most suitable drug for *Vamana* in children.

*Shodhana* Therapy should be followed with proper care in children.

**Shamana Chikitsa**

1. Symptomatic Treatment
2. Treatment according to predominant *Dosha*
3. Specific Treatment
4. *Pathya Apathya*

**DISCUSSION**

Anemia is defined as destruction of RBC's due to lack of oxygen causing tissue hypoxia resulting in haemoglobin concentration below the range of values.<sup>[20]</sup> Among all nutritional disorders, Iron deficiency is common cause for anemia. Iron deficiency anemia occurs when the decrease in total iron body content is severe enough to diminish erythropoiesis and cause anemia. Iron deficiency can result in diminished growth and learning. Children are more susceptible than adults because of their growing age and adaptation to new environment,

lack of consciousness about food & Hygienic habits and initial lower immune response to newer infections & infestations.

**CONCLUSION**

*Pandu Roga*, where the color of skin in patient changes from normal color to *pandu varna*, or the mixture of white and yellow color which resembles with pollen grains of *ketaki* flowers is more similar to anemia w.s.r. to iron deficiency anemia in which there is predominance of pallor in the body. *Pandu Roga* In *Ayurveda* and Iron deficiency anemia in modern medicine are similar on the basis of etiological factors & clinical correlation. *Ayurveda* treatment of *Kaphaja Pandu* is very useful to treat Iron Deficiency Anemia.

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