

**A CRITICAL REVIEW OF PANDU ROGA IN CHILDREN W.S.R TO IRON DEFICIENCY ANAEMIA****Dr. S. Sujan<sup>1\*</sup>, Dr. Sunil P. Changle<sup>2</sup> and Dr. Swapnil C. R.<sup>3</sup>**<sup>1</sup>PG Scholar, Parul Institute of Ayurveda, Parul University, Limda, Vadodara.<sup>2</sup>Professor, Parul Institute of Ayurveda, Parul University, Limda, Vadodara.<sup>3</sup>Associate Professor, Parul Institute of Ayurveda, Parul University, Limda, Vadodara.**\*Corresponding Author: Dr. S. Sujan**

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**ABSTRACT**

Nutritional deficiency is the major cause for disease in developing countries like India. In India, most of the peoples are below poverty level and they are not able to afford balanced nutritional diet like milk, cereals, and green leafy vegetables for their routine diet. Due to which, Indian children are prone towards nutritional deficiency disorder like Iron Deficiency Anaemia .WHO opines that more than 2 millions of children in world are anaemic and in which half of the children are suffering from Iron Deficiency Anaemia. According to Ayurveda classics, Anaemia can be correlated with *Panduroga* on the basis of resemblance in *lakshanas*. Etiopathogenesis of *Panduroga* mentioned in Ayurveda are concerned with severe depletion of *ojasogunaah* in body (like *bala*, *Varna*, *sneha* etc.) leads to *alpa rakta* and *alpameda* and *nissara* (*malaise*) which in turn causes *sithilaindriyaah*. Such child attains *vivarnata* of skin like *pandu*. Because of dominance of *panduvarna* in all of them the disease goes by the name of *pandu roga*. The main intent of the treatment according to *Ayurveda* is correcting and balancing *Agni*, by which the metabolism can function properly. *Kaphaja pandu roga* shows correspondence with Iron deficiency anaemia.

**KEYWORDS:** *Pandu*, Iron Deficiency Anaemia, Nutritional deficiency.**INTRODUCTION**

In developing countries like India there is burden of population explosion, poverty, overcrowding, poor sanitation, and malnutrition. Indian children are more prone to develop nutritional deficiency disorders like iron deficiency and ultimately suffer from the disease like Iron deficiency. Anaemia resulting from lack of sufficient iron for synthesis of haemoglobin is the most common hematologic disease of infancy and childhood. The frequency of iron deficiency anaemia is related to certain basic aspects of iron metabolism and nutrition.<sup>[1]</sup> The NFHS 3 suggests that 79% of Indian children are suffering from Iron deficiency. Though the Government of India had launched the supplementation of iron and fortification of food with the iron, Iron deficiency anaemia is burning health issue in Indian school going children.<sup>[2]</sup> WHO has stated that, there are 2 billion people suffering from anaemia worldwide and amongst them half of them are due to iron deficiency. The prevalence of anaemia in developing countries is 39% in children below 5 years of age, and 48% in children between 5-14 years of age group.<sup>[3]</sup> In children IDA affects cognitive and motor developmental and increases suspected ability to infections. WHO has adopted a comprehensive implementation plan for anaemia by

2025 to achieve six global nutritional interventions and multi spectral actions in the food system education and social protection, low birth weight, stunting, wasting and overweight.<sup>[4]</sup> According to National Nutritional Bureau Bangalore, IDA prevalence among children under 5 years of age was 66%.

**AIM AND OBJECTIVES**

- To study the etio-pathogenesis of *Pandu Roga* from Ayurveda and modern perspective.
- To highlight the intervention of *pandu roga* from Ayurvedic perspective.

**MATERIAL AND METHOD**

Ayurvedic Samhitas and its relevant commentaries have referred to collect the material for the article. Text of modern paediatrics by Op Ghai, text book of paediatrics by Nelson has also referred to collect material for this article.

**DISCUSSION**

Anaemia is defined as destruction of RBC's due to lack of oxygen occur tissue hypoxia resulting into haemoglobin concentration below the range of normal values.<sup>[5]</sup> The reduction in RBC volume leads to less

oxygen carrying capacity of blood and leading to various clinical symptoms. The most common causes of Anaemia are poor diet, milk intolerance, and chronic blood loss etc.<sup>[6]</sup> In developing countries like India, with increased burden of population and low per capita income, overcrowding, poor sanitation etc. which lead to nutritional deficiency in children. Among all nutritional disorders, iron deficiency is common cause for Anaemia. IDA is defined as the depletion of iron storage in the body (normally 1 mg of iron should be absorbed each day), where loss of iron exceeds the iron intake and resulting in insufficient iron for haemoglobin production (normally new born has about 0.5g of iron and adults has about 5g-average of 0.8mg iron absorption per day)<sup>[7]</sup> deficient haemoglobin causes less oxygen and nutrient

supply to tissues. The diminished supply is related to Hb and blood volume. The main causative factors of IDA are Malabsorption, Worm infestation, chronic diseases and Haemorrhage. The clinical manifestation includes pallor, fatigue, irritability, weakness, dyspnoea, decreased appetite etc. Iron deficiency has effect on neurological and intellectual functions in children.<sup>[8]</sup> On the other hand deficient intake of nutrients or food articles is not much emphasised in the pathogenesis of *Panduroga*. The *nidana* of *pandu roga* mentioned in Ayurvedic classic under following three categories;

1. Aharaja Hetu<sup>[9,10,11,12,13]</sup>
2. Viharaja Hetu
3. Nidanarthakara Roga

<i>Aharaja hetu</i>	<i>Viharaja hetu</i>	<i>Nidanarthakara roga</i>
<i>Ksharatishevana</i>	<i>Atinidra</i>	<i>Grahani</i>
<i>Amlatishevana</i>	<i>Ativyayama</i>	<i>JeernaJwara</i>
<i>Lavanatishevana</i>	<i>Ativyavaya</i>	<i>KatikatarunaMarmavedana</i>
<i>Katukatishevana</i>	<i>Atiyasa</i>	<i>PunaravartakaJwara</i>
<i>Kashyatishevana</i>	<i>Bhaya</i>	<i>Plihodara</i>
<i>Ushnatishevana</i>	<i>Chinta</i>	<i>Raktatipravartana</i>
<i>Tikshnatishevana</i>	<i>Diwasvapana</i>	<i>Raktakshaya</i>
<i>Rukshnatishevana</i>	<i>Krodha</i>	<i>Raktasrava</i>
<i>Viruddhatisevana</i>	<i>Kama</i>	<i>Raktarsha</i>
<i>Asatmyabhojana</i>	<i>Ratrijagarana</i>	<i>Rajyakshma</i>
<i>Mamsatishevana</i>	<i>Rituvashmya</i>	<i>Raktarbuda</i>
<i>Mrudbhakshana</i>	<i>Shoka</i>	<i>Rasapradoshjanya Roga</i>
<i>Vyapannasalilapana</i>	<i>Snehavibhrama</i>	<i>Raktapradara</i>
<i>Vishamasevana</i>	<i>Snehatiyoga</i>	<i>Sannipatodara</i>
-	<i>Vegavarodha</i>	<i>Shohta</i>
-	<i>Vegavidharanain VamanaKarma</i>	<i>Shwasa</i>
-	<i>Divaswapnaduringdige stion</i>	<i>Santarpanjanya Roga</i>
-	<i>Vyayamduringdigestion</i>	<i>Upadrava of Raktapitta</i>
-	-	<i>Vedha Dhamani Marmas</i>
-	-	<i>Yakritplihavedha</i>

➤ **Purvarupa**<sup>[14,15,16,17,18]</sup>

It has been described in all the *samhita*'s

No.	PURVARUPA
01.	<i>Avipaka</i>
02.	<i>Akshikuta Shohta</i>
03.	<i>Aruchi</i>
04.	<i>Alpavanhita</i>
05.	<i>Angasada</i>
06.	<i>Gatrasada</i>
07.	<i>Hridspandanam</i>
08.	<i>Mutra Pitata</i>
09.	<i>Mridbhakshanechcha</i>
10.	<i>Panduta</i>
11.	<i>Rukshata</i>
12.	<i>Swedabhava</i>
13.	<i>Shrama</i>
14.	<i>Sthivanadhikya</i>
15.	<i>Twaksphutana</i>

➤ **Samanya lakshana**<sup>[19,20,21,2,23]</sup>

<b>Vataja Panduroga</b>	<b>PittajaPanduroga</b>	<b>KaphajaPanduroga</b>	<b>MridbhakashanjanyaPanduroga</b>
Krishnavarnata	Pitata	Shvetavabhasata	Ananashopha
Krishnanetratva	Haritabhata	Shuklakshita	Akshikutashotha
Krishnasiravanadhatva	Pitekshanatva	Shuklananatva	Asyashotha
Krishnanakhatva	Pitasiravnaddhata	Shuklanakhatva	Arsha
Krishna ananatva	Pitanakhatva	Shuklasiravanaddhata	Atisara
Arunanakhatva	Pitananatva	Gaurava	Balakshaya
Arunasiratva	Pitachhavi	Tandra	Gandashotha
Arunanetrata	Haritasiratva	Chhardi	Krimikoshta
Twakpitata	Jwara	Praseka	MehanaShotha
Netrapitata	Daha	Lomaharsha	Nabhishotha
Nakhapitata	Trishna	Sada	Sakaphapurisha
Rukshangata	Chhardi	Murchchha	Purishajakrimi
Rukshasiratva	Murchchha	Bhrama	Padashotha
Rukshanakhatva	Sweda	Klama	-
Rukshanetrata	Shitakamita	Shwasa	-
Parushata	Anannabhinandana	Kasa	-
Angamarda	Katukasyata	Alasya	-
Angaruk	Ushnanupashayata	Aruchi	-
Angatoda	Amlanupashyata	Vakgraha	-
Kampa	Vidaha	Swaragraha	-
Parshvaruk	Amlodgara	Katukamata	-
Shiroruk	Daurgandhya	Rukshakamata	-
Shirogaurava	Daurbalya	Ushnakamata	-
Asyavairasya	Tama	Shotha	-
Anaha	Shosha	Madhurasyata	-
Shopha	Shopha	Lavanavaktrata	-
Bhrama	Pitamutrata	Swarakshaya	-
Varcashosha	Pitavitkata	Shuklamutrata	-
Gandhavitkata	Bhinnavarchastva	Shuklavarchastva	-
Krishnavitkata	-	Shuklatwak	-
Arunavitkata	-	-	-
Rukshamutrata	-	-	-
Darunakoshthata	-	-	-
Mutrapiatata	-	-	-

**Samprapti of pandu roga**<sup>[24]</sup>

Due to *Nidana*, *pitta dosha* gets vitiated and expelled by *vayu* and it reaches the *hridaya* and from there it spreads through the *dasadhamani* and mobilizes entire body and gets localized between *tvaka* and *mamsa*. Vitiated *kapha*, *Vata*, *Asruk*, *Tvaka* and *Mamsa* cause *tvakavaivarnata* such as *Pandu*, *Haridra*, *Harita* etc. Along with skin discoloration there is systemic symptoms like exertional dyspnea, tiredness, breathlessness, leg cramps etc. Such a diseased condition is named as *Pandu Roga* in Ayurveda classics.

These all symptoms of *Pandu Rogo* hand in hand with that of *Anaemia* explained in modern system of medicine.

**Treatment of pandu roga**

**‘THATHRA PANDUVAMAYI SNIGDHASTIKSHNA URDHVA ANULOMIKAIHI**<sup>[25]</sup>

1. *Sodhana*
2. *Samana*

**Sodhana chikitsa**

*Vamanam* & *Virechanam* is done by *snigdha* & *tikshna dravyas*. Every *sodhanakarama* should be given after *snehanam* only. *Madanaphalam* is the most suitable drug for *vamana* in children. Generally *sodhana therapy* should be followed with proper care in children.

**Samana chikitsa**

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

1. Treatment according to the predominant of *dosha*

<i>Vata</i>	<i>Sneha Dravyas</i>
<i>Pitta</i>	<i>Tikta &amp; Sheetha</i>
<i>Kapha</i>	<i>Katu, Tikta &amp; Ushna</i>
<i>Sannipataja</i>	All Are Combined
<i>Mritbakshnanaya pandu</i>	<i>Tiksna Virechana</i>

## 2. Specific Treatment

### Pandu Chikitsa

Single Drug	Compound Drug	Ghrita	Rasayana Drugs	Loha Kalpa	Herbomineral Drugs
Lauha Bhasma	Triphala	Maha Tiktaka Grutha	Shilajatu	Saptamrita Loha	Yogaraja Guggulu
Pure Kaseesa	Phalatrikadhi Kwadha	Pathya Grutha	Vidanga Rasayana	Tapyadi Loha	Shilajathu Vati
Mandoora Basma	Punarnavashtaka Kwadha	Rajani Grutha	Amalaki Rasayana	Vidangadi Loha	Navayasa Loha Mandoora Vataka
Vardhamana Pippali	Vidangavaleha		Vardhaman Pippali	Navayas Loha	Punarnava Mandoora
	Gomuthra Harithaki			Dhatri Loha	Herbomineral Drugs

### Pathya Apathya

Pathya	Apathya
Godhuma	Kshra
Yava	Amla, Lavana, KatuAharas
Purana Shali	AtiushnaTikshna
Soup Of Green Gram	Ativyayama
JangalaMamasa Rasa	Virudhahara
Kharjura	Vidhahyannam
PakvaAmala	Shimbi Patra Shaka, Pinyaka
Rasona, Guduchi, Patola, Punarnava	Tambula, Sarshapa, Divaswapna

## CONCLUSION

Iron deficiency Anaemia is one of the leading nutritional deficiency diseases prevailing in Indian children. *Kaphaja Pandu* explained in Ayurveda can be correlated with the Iron deficiency Anaemia. Ayurveda treatment of *Kaphaja Pandu* is very useful to treat the Iron deficiency Anaemia of children.

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