REVIEW ARTICLE: AN ETIOPATHOGENESIS OF PANDU ROGA W.S.R TO IRON DEFICIENCY ANEMIA

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ABSTRACT

Ayurved, the holistic science which deals with the states of life which includes both preventive and curative aspects of human being. There are many conditions which affects the healthy condition, among them nutrition deficiency is also responsible for it. Anemia is a disease which comes under this kind of condition which is commonly found and affects all group. It is classified into various types, among them Iron deficiency anemia is more common in developing country like India. It is comes under the group of nutrition deficiency diseases although it is also found in over nutrient people as well as in people who are having unhygienic food and food which is have less quality of nutrition such as fast food ,junk food etc. Pallor is a common cardinal sign of anemia and Pandu. So, anemia can be correlate with PanduRoga. In the modern medicine, Iron Deficiency Anemia is considered as a lack of iron in the body and the consequences due to that deficiency. Where as in Ayurved, there is a description regarding Dosha and Agni is available. Each and every patient is diagnosed by observing predominancy of Dosha as well as condition of the Agni. So, acc. to Ayurved, Diagnosed patient of IDA can be classified on the basis of Dosha predominancy. So, if we focus on etiopathogenesis of iron deficiencyanemia with reference to Pandu and its sub types and it will help for proper consequences of treatment. As Pandus classified into 5 type on the basis of predominancy of Dosha. Nidan and Chikitsa of each Panduismentioned also
separately. The following article, REVIEW ARTICLE ON ETIOPATHOGENESIS OF PANDUROGA W.S.R TO IRON DEFICIENCY ANEMIA’ will shed light on etiopathogenesis of iron deficiency anemia as well as Pandu and its sub types.

KEYWORDS: PanduRoga, Iron deficiency anemia, etiopathogenesis.

INTRODUCTION

Pandu is a disease which is separately described in ayurvedic treatise by all Acharyas. Acharya Charakhas mentioned it under the category of Rasa PradoshajaVyadhi as well as Santarpan Janya Vyadhi. AcharyaSushruthas has mentioned it under the category of Rakta Pradoshaja Vyadhi as well as Apatarpan Janya Vyadhi.

In contemporary science, the description regarding anemia is available. The cardinal sign of the anemia is pallor and general weakness. The meaning of Pandu itself is pallor or whitish pale colour. Due to this similarity, Pandu can be comprehended as an anemia.

As per the WHO, Anaemia is a public health problem that affects population in both rich and poor countries. There are number of conditions such as malaria, parasitic infection, impaired production, blood loss, increased RBC destruction, nutritional deficiency etc. are responsible for manifestation of disease. On the basis of causative factors and morphology of red blood cell, anemia is classified into various type. Among the all types, iron deficiency anemia is more common in developing country like India. It is described under the nutrition deficient diseases although it is also found in over nutrient people. It is also called as microcytic and hypochromic anemia on the basis of the normal morphology of the red blood cell. The low level of Hb with the low level of RBC, PCV, MCV, MCH, MCHC and RDW% can identify the microcytic as well as hypochromic RBCs. By this routine investigations, it can be diagnosed. Other than that specific investigation can be done like S.iron, Ferritin, total iron binding capacity.

Vyutpatti

The term Pandu has been derived from the root Dhatu. This root dhatu belongs to 10th gana. Padi-nashane means destroy. Pandu is a VarnaPrerak i.e. colour indicating name. so, above meaning is to destroy natural colour.
Nirukti

The word Pandu is described as white, yellowish white etc. according to various dictionary. Vachaspatya refers Pandu as mixture of white and yellow colour which resembles with the pollen grains of Ketki flower.

In Sanskrit dictionaries, the meaning of PanduVarna has been found as Pitta, Shukla, Pittabhabhartha etc.

Acharya Charak approved by the word “Vaivarnya”. Acharya Sushrut, Vagbhatta, Dalhan, Arundutta etc., have taken Swethabdh, Pitaabh, Dhusar, Malin Varna by PANDUVarna.

Monier William has taken pallor from PanduVarna.

Nidan: In regard to causative factors of Panduroga, only Charak and Madhav has explained in detail, while Acharya Sushrut and Vagbhatt has not been clearly described, 1) Aharaj Hetu, 2) Vihaaraj Hetu, 3) Nidanartha Kara Roga.

Causative factors (AharajNidan) of Pandu described in different classical Text of Ayurved

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<th>Nidan</th>
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Causative factor (ViharajNidan) of Pandu described in Different classical texts of Ayurved

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Causative factors Manasik (Psychological factors) of Pandu described in different classical texts of Ayurved.

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Nidanarthakara Roga of Pandu as described in different classical texts of Ayurved


On the basis of Nidan, Katu and Kashaya Rasa Sevan, Madya Ati Sevan, Ativayam, Ati Vyavaay, Vegadharan, Nindranashana, Panchakarma Vyaapat, Kama, Chinta, Bhaya, Shoka are responsible for vitiation of VataDosha.

Kshara, Amla, Lavan, Ati-Ushana, Ati-Tikshana, Madya, Nishpava, Pinyaka, Tiltail Ati Sevan and KrodhNidan are responsible for the provocation of the PittaDosha.

Some Nidanas like, Mamsa Sevan, Amla and Lavan Ras Sevan, Avyayam and Divaswapare responsible for the vitiation of the Kapha Dosha.

Rakta Kshay Janya Vydhi are responsible for the provocation of VataDosha, as DhatuKshaya leads to Prakopa of Vata.
* Now, in contemporary science, the causative factors of iron deficiency anemia is classified mainly in three categories:

1) Dietary lack of iron intake
2) Hampered iron absorption
3) Any bleeding disorders

**Poorv Rup**

_Hridaya Spandan, Raukshya, Swedabhava, Shram, Twak Sfotan, Shthivan, Gatrasaad, Mridbhakshan Ichchha, Prekshankut Shoth, Avipaak, Vitpittata, Mutrapitatta, Aruchi, Alpavahntita, Saad_, these are the prodromal symptoms of Pandu.

**Rupa**


* Signs and symptoms of iron deficiency anemia*

**Signs**

_Pallor- Palms, palmer creases, Oral mucus membrane, Nail bed, Peripheral conjunctivitis_  
_Nail- Brittle, fragile, Koilonychias_  
_Skin -discoloration Thickness and texture of the_  
_Odeama, Tachycardia, Cardiac dilatation_

**Symptoms**

_Fatigue (Mild-After exertion), Fatigue (Severe-Even in rest), Lassitude, Weakness, Unable to tolerate significant exercise, Dyspnoea (Breathlessness), Palpitation, Dizziness, Vertigo, Headache, Tinnitus, Throbbing in head and ear, Throbbing in head and ear, Decrease work performance, Slow Social Development, Restless leg syndrome, twitching Muscles, Paraesthesia in fingers and toes, Irritability, Anxiety, Depression, Lack of concentration, Sleepiness, Insomnia, Syncop, Anorexia, Dysphagia (Due To Oesophageal Webs),_
Indigestion, Nausea, Bowel disturbance, Angina, Hypersensitive to cold, Amenorrhea, Polymenorrhea, Hair Loss, Impotence, Loss of libido, Glossitis, Pica

- **Samprapti**
  1) **Samanya Samprapti**
  It is stated that when *VatadiDosha* vitiates *PittaDosha*, that vitiated *Pitta* is responsible for the vitiation of the *Dhatus*, cause *DhatuShaithilyam* and *DhatuGaurav*. Owing to vitiation of *Shareera* by this *DushitaDoshas*, excessive *Kshya* of *BalaVarna*, *Snehana* and *Ojas* occurs resulting in Alparaktata, Alpamedastaka, Nisarata, Shithilendriyata and Vaivarnya which is known as Panduroga.[88,89] This is common to all type of Pandu.

  2) **VisheshSamprapti**
  It is the specific pathogenesis in which the disease is manifested according to the SamanyaSamprapti. However a specific etiology which can aggravate a specific *Dosha*, slightly modifies the general Samprapti and produce a specific type of Pandu.

- **The role of Vata in development of PanduRoga**
  Owing to *VataDushtiKarAhara*, *Viharaj* and *ManasikNidan*, like ati *Ruksh*, Laghuahar, *AtiVyayaam*, *AtiVyavay*, *AtiAdhvagaman*, *Chinta*, *Bhaya*, *Shoka* etc. are Ruksh and Laghu in nature. *VataDosha* is responsible for the VishamAgni (*Jatharagni*). *PachakPitta* is Ashrayee to Jatharagni. Hence, *PachakPitta* is getting vitiating by *VataDosha*. *PrakrutKarma* of *Pachakpitta* is hampered and not digest the food properly. So, *AdyaDhatu*(RasaDhatu) formation is hampered which leads to Uttarottar Dhatu *Kshaya* or *shithilata* of Dhatu, Gauravata and Nisarata.

- **The role of Pitta in development of Pandu Roga**
  Owing to *PittaDushtiKaraAharaVihar*, *ManasikNidan*, like *AtiTeekshna*, *AtiUshna*, *Amla*, *Lavan*, *KsharaPradhan* Ahara, *Krodh* etc. are Teekshan, *Ushna* in nature. Here, *DravyatahVridhhi* of *Pitta* is happened which leads to diminished of *Guna* or quality of *PrakrutPitta*. Hence, *Prakrutkarma* of *PachakPitta* is hampered and not digest the food properly. So, *AdyaDhatu* (RasaDhatu) formation is hampered which leads to UttarottarDhatuKshaya or Shithilata of Dhatu, Gauravata and Nisarata.
• **The role of *Kapha* in development of *PanduRoga***

Owing to *Kapha Dushti Kar Aharaj, Viharaj and ManasikNidan*, like *Ati Snigdha, Guru, Abishyandi Ahar, Diwaswapna, Ayayam* etc. are *Guru*, *Sheet* and *Mand* in nature. *Kapha Dosha* is responsible for the *Mand-Agni* (Jatharagni). *PachakPitta* is *Ashrayee* to *Jatharagni*. Hence *PachakPitta* is getting vitiated by *KaphaDosha*. *PrakrutKarma* of *PachakPitta* is hampered and not digest the food properly. So, *AdyaDhatu* (*RasaDhatu*) formation is hampered which leads to *Uttarottar Dhatu Kshaya* or *Shithilata* of *Dhatu, Gauravata* and *Nisarata*.

• **Sannipataja Pandu Roga**

Owing to indulgence of *Tridosha Prakopak Ahara, Vihara* and *Manasik Nidan*, vitiation of *Tridosha* occurs, this results in *Tridoshaja Panduroga* by vitiating *Agni* as well *Pitta*. In *Tridoshaja Pandu Roga Dhatu Shaithilyam* and *Dhatu Gauravam* are deepest and the patient’s *Rakta, Bala, Varna* and *SnehaGunas* go into *Teevra Ksheenavasthaa* and probably that could be the reason *Sannipataja pandu* has been termed as *Asadhyam* and *Achikitsitam*.

• **Mridbhakshana janya Pandu**

Owing to *Kashaya Mrittika Bhakshana, Vata* gets vitiated. With *Ooshara Mrittika Bhakshana, Pitta* gets vitiated and because of *Madhura Ras Mrittika Bhakshan, Kapha* gets vitiated. Hence, depending upon *Dosha* vitiation that particular *Dosha* *Pandu* develops in the body with *Mrittika Bhakshana*.

This is reviewed after observing 40 patients of iron deficiency anemia which were diagnosed with routine investigation of blood. Hb, RBC, PCV, MCV, MCH, MCHC, RDW% and microscopic examination for morphology of RBC were done for the diagnosis. Then diagnosed patients of Iron Deficiency Anemia were taken for the study. *Nidan, Poorva Rupa, Samanya Lakshan* and *VisheshLakshan* of *Pandu* and its subtypes were observed. Diagnosed patients of Iron Deficiency Anemia were classified into sub types of *Pandu* on the basis of majority of *Lakshan* and *Nidan*.

Among them 55% patients were of *VatajPandu, 25% of KaphajPandu, 15% of Vata-Pittaj*, and 10% of *Vata-Kaphaj*. So, it can be conclude that Iron deficiency can be comprehended as *Vata* and *KaphajPandu*. 
In one group of diagnosed patients of Iron deficiency anemia, age, education, occupation, working condition, socio-economic status and area of residence were observed and maximum patients were uneducated, doing labour work, doing heavy work, poor and resides at slum area. Lack of quality and quantity of the food which contain iron as well as nutrients will be less in those patients. It is the main cause for manifestation of IDA. In the same patients, Nidan, PoorvaRupa, Rupa and VisheshRupa of VatajPandu were observed. So, etiopathogenesis of VatajPandu can be nearly compare with the etiopathogenesis of IDA, in those patients who are having lack of iron intake.

In another group of diagnosed patients of iron deficiency anemia, age, education, occupation, working condition, socio-economic status and area of residence were observed and maximum patients were age group between 45-60, educated, having sedentary life style, doing mild work, belongs to Middle class and urban area. So, they may be taking food having enough quantity of iron. In this group of patients, Nidan, PoorvaRupa, Rupa and VisheshRupa of KaphajPandu were observed. So, it can be conclude that, in such patients, Mandagni plays major role which hampers absorption of sufficient dietary iron. So, etiopathogenesis of KaphajPandu can be nearly compare with the etiopathogenesis of IDA, in those patients who are having proper intake of iron but iron absorption is hampered.

After observing and discussing above all the factor, etiopathogenesis of Iron deficiency anemia can be comprehended as etiopathogenesis of VatajPandu and KaphajPandu. It can be explained like below:

\[ \text{ApararpanJanyaPanduRoga} \]
\[ \text{AharPoshanAbhaav due to poverty,} \]
\[ \text{(Dietary lack of Iron)} \]
\[ \text{VataDoshaDuahiKarAharVihar} \]
\[ \text{(Ruksha Ahar, Anashan, Laghu Anna)} \]
\[ \text{Ati Shram, Ratri Jagran, Ativaya, Ati AdhvaGaman, Ati Vyavay) } \]
\[ \text{Laghu,Rukha,Shita Guna Pradha Ahar And Vihar} \]
\[ \text{Amila, Katu, Tikta, Kashay Rasa Pradhana Ahar} \]
\[ \text{Vata Dosha Prakopa} \]
VataDosha is responsible for the “Visham agni” (JatharAgni)

This VishamAgni vitiates the Karma of PrakruPachakPitta which is responsible for the Pachan.

Ultimately PachakPitta is getting vitiated by the VataDosha.

So, Digestion of Ahara is hampered as PachakPitta depends on JatharAgni,

AdyaDhatuNirmaan (RasDhatu formation) is hampered.

Quantity of AdyaAharaRas is reduced

(SarRasaDhatuKshay)

Uttarouuttar DhatuKshay (RaktaKshay)

DhatuShaithilya

Properties of Bala, Varna, Sneha and Oja are diminished along with that signs & Symptoms of both Iron deficiency anemia and VataPandu are seen.

SantarpanJanyaPanduRoga

Hampered iron absorption
Kapha Dosha Dushti Kar Ahar Vihar

(Guru, Sheet, AriSnigdha, Adivaasah, Atininiruddra, Achintya)

Guru, Snigdha, Shita Guna Pradhan Ahara And Vihar
Madhur, Amla, Lavan Rasa Pradhan Ahar

Kapha Dosha Prakopak Nidan

Kapha Dosha is responsible for the Mandagni (Jatharagni as well as Dhatvagni)

Cause of iron deficiency anemia

Milk, egg, yogurt, cheese, almonds, Coffee, tea, walnut, peas, cereals, dried beans, whole grains, chocolate, sesame etc. calcium, oxalate rich food hampers the absorption of iron.
As well signs and symptoms of Iron Deficiency Anemia.

CONCLUSION

According to WHO, over one third of population suffers from anaemia and India continues to be one of the countries with very high prevalence rate. Among them iron deficiency is the most common among the all types of anemia. If the patients possesses the symptoms like pallor, weakness and fatigue after mild exercise or without exercise, dyspnoea, insomnia, sleepiness etc., with low level of Hb, along with above mentioned criteria, diagnosed iron deficiency anemia can be comprehended with vataj and kaphaj pandu predominantly. So, for such a patients, treatment protocol will be differ.

REFERENCES