

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

Pandu Roga. 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 deficiency anemia with reference to *Pandu* and its sub types and it will help for proper consequences of treatment. As *Pandu* is classified into 5 type on the basis of predominancy of *Dosha*. *Nidan* and *Chikitsa* of each *Pandu* is mentioned 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 Pradoshaja Vyadhi* as well as *Santarpan Janya Vyadhi*. *Acharya Sushruthas* 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 *Varna Prerak* 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*, *Pittabhagartha* etc.

Acharya Charak approved by the word “*Vaivarnya*”. *Acharya Sushrut*, *Vagbhatta*, *Dalhan*, *Arundutta* etc, have taken *Swethabh*, *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*

	<i>Nidan</i>	C.S.	S.S.	M.N.	Vagbhatt	B.P.
	<i>Dravya</i>					
1.	<i>Atiteekshna</i>	+	+	+	-	+
2.	<i>Atiushana</i>	+	+	-	-	-
3.	<i>Nishpava</i>	+	-	-	-	-
4.	<i>Mansha</i>	+	-	-	-	-
5.	<i>Pinnyaka</i>	+	-	-	-	-
6.	<i>Tiltaila</i>	+	-	-	-	-
7.	<i>Madya</i>	+	-	-	-	+
8.	<i>Maireya</i>	+	+	+	-	-
9.	<i>Mruttika</i>	+	+	+	+	+
10.	<i>Rasa</i>					
11.	<i>Kshara</i>	+	-	-	-	-
12.	<i>Lavana</i>	+	-	+	-	-
13.	<i>Amla</i>	+	+	+	+	+
14.	<i>Katu</i>	-	-	-	+	-
15.	<i>Kashaya</i>	-	-	-	-	-
16.	<i>Ahara</i>					
17.	<i>Virudha</i>	+	-	-	-	-
18.	<i>Vidagdha</i>	+	-	-	-	-
19.	<i>Asatmya</i>	+	-	-	-	-

Causative factor(*ViharajNidan*) of *Pandu* described in Different classical texts of *Ayurved*

	Nidan	C.S.	S.S.	M.N.	Vagbhata	B.P.
1.	<i>Ati vyayaam</i>	+	-	+	+	+
2.	<i>Ati vyavaaya</i>	+	+	-	+	-
3.	<i>Divaswaapa</i>	+	+	+	+	+
4.	<i>Panchakarma vyapat</i>	+	-	-	-	-
5.	<i>Rituvaishamya</i>	+	-	-	-	-
6.	<i>Vegadharana</i>	+	-	-	-	-
7.	<i>Nidranaashana</i>	-	-	-	-	-
8.	<i>Avyayama</i>	-	-	-	-	-

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

Sl.No.	Nidan	C.S.	S.S.	M.N.	Vagbhata	B.P.
1.	<i>Kama</i>	+	-	-	-	-
2.	<i>Chinta</i>	+	-	-	-	-
3.	<i>Bhaya</i>	+	+	+	-	-
4.	<i>Shoka</i>	+	-	-	-	-
5.	<i>Shoka</i>	+	-	-	-	-

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

Raktarbudha, Antarlohita Raktapitta Upadrava, Raktarsha, Raktapradar, Pleeharoga, Kamala, Rakta-Gulma, Jeema Jwara, Rajyakshma, Shosha, Grahani, Raktakshaya, Raktasrava, Pureeshaja Krimi.

On the basis of *Nidan, Katu and Kashaaya Rasa Sevan, Madya Ati Sevan, Ativyayam, 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 Vyadhi 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 Sphotan, Shthivan, Gatrasaad, Mridbhakshan Ichchha, Prekshankut Shoth, Avipaak, Vitpittata, Mutrapitatta, Aruchi, Alpavahnita, Saad, these are the prodromal symptoms of *Pandu*.

❖ *Rupa*

Karnakshwed, Hat Anal, Daurbalya, Sadan, Annadweshya, Shram, Bhrama, Gatrashool, Jwara, Shwas, Gaurav, Aruchi, Angamarda, Gatrapieda, Gatronmathan, Shunakshikut, Haritvarnata, Panduta, Sheerna Lomata, Hataprabhatwa, Kopanatwa, Shishir Dwesha, Nidralutwa, Shthivan, Alpa Wakatwa, Pindikodweshtan, Katiruk, Padruk, Ururuk, Dhatu Shaithylya, Ojo Kshaya, Alparaktata, Raktadushti, Alpamedoskata, Nissarta, Hrid Drav, Shithilendryata, Twak Panduta, Shwetakshitwa Shwet-Nakhatwa, Shwet-Vakrata, Nabhi Shotha. These are the *Samanya Lakshana* of *Pandu Roga*.

* **Signs and symptoms of iron deficiency anemia**

Signs

Pallor- Palms, palmer creases, Oral mucus membrane, Nail bed, Peripheral conjunctivitis

Nail- Brittle, fragile, Koilonychia

Skin -discoloration Thickness and texture of the

Oedema, 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, Syncope, 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 *VataDushtiKarAharaj*, *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 vitiated 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***

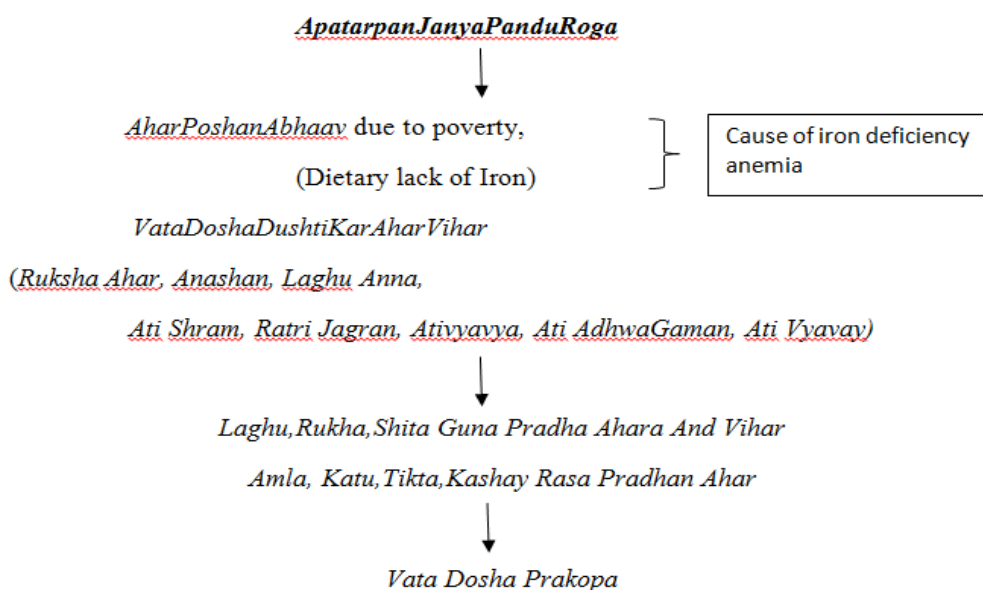
Owing to *Kashaya Mrittika Bhakshana*, *Vata* gets vitiated. With *Ooshara Mrittika Bhakshana*, *Pitta* gets vitiated and because of *Madhura Ras Mrittika Bhakshan*, *Kapha* gets vitiated. Hence, depending upon *Dosha* vitiation that particular *Doshaja Pandu* develops in the body with *Mrittika Bhakshana*.

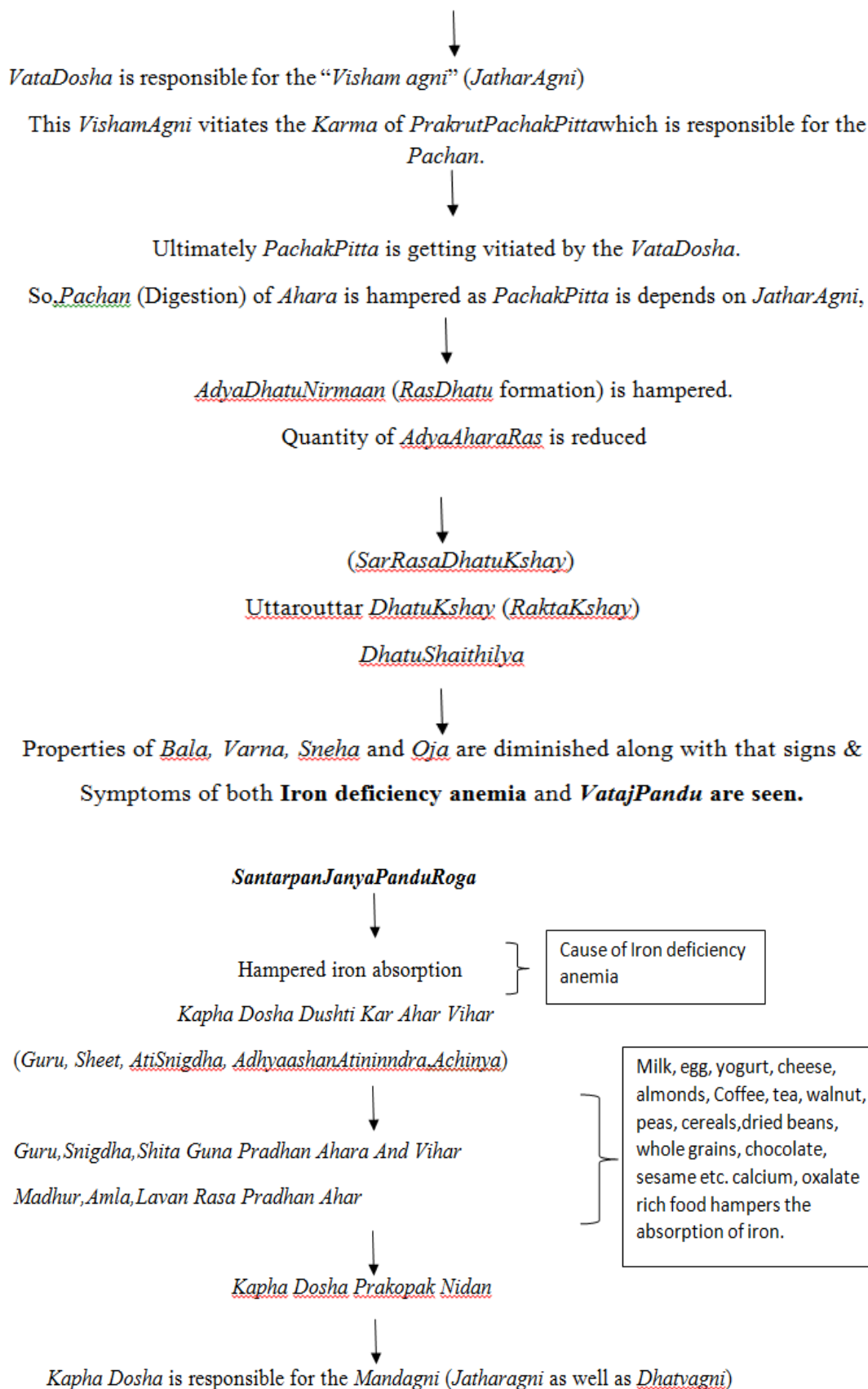
This is reviewed after observing 40 patients of iron deficiency anemia which were diagnosed with routine investigation of blood. Hb, RBC, PCV, MCV, MCH, MCHC, RDW% and microscopic examination for morphology of RBC were done for the diagnosis. Then diagnosed patients of Iron Deficiency Anemia were taken for the study. *Nidan*, *Poorva Rupa*, *Samanya Lakshan* and *Vishesh Lakshan* 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*.

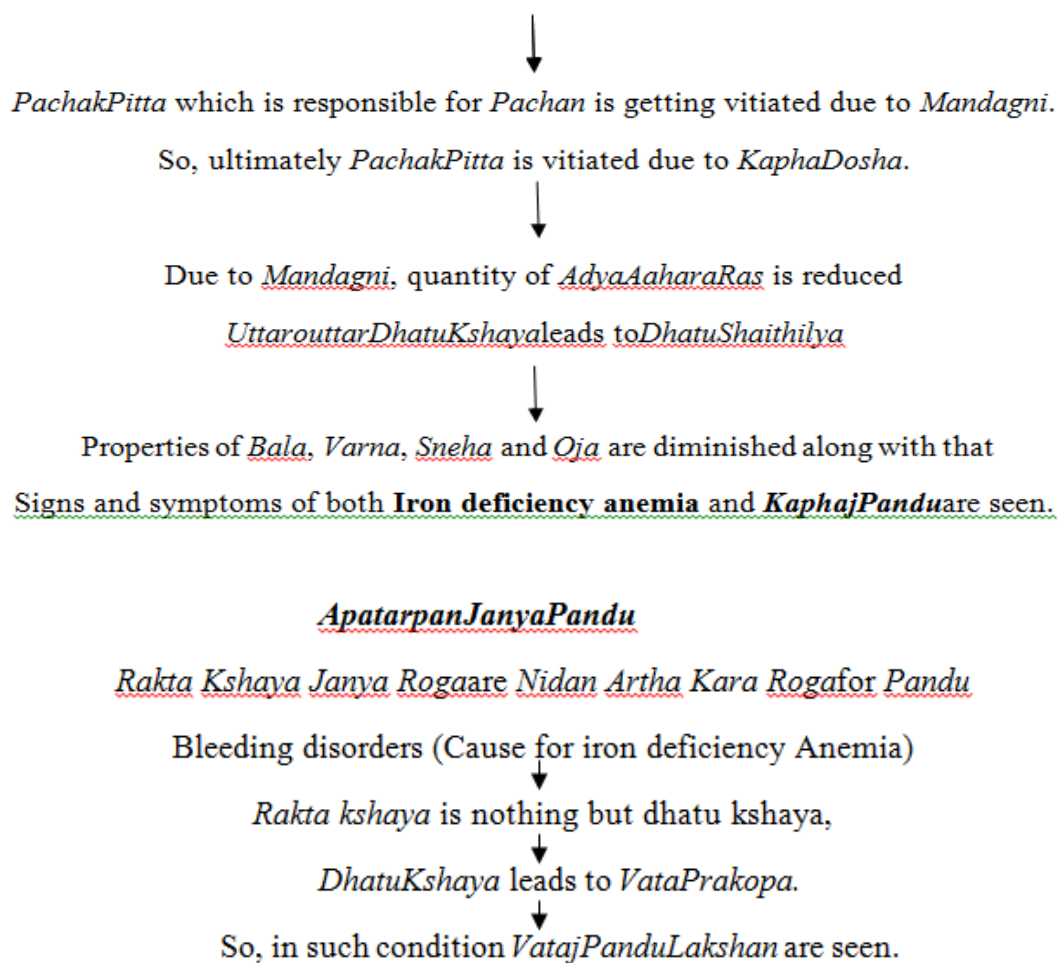
Among them 55% patients were of *VatajPandu*, 25% of *KaphajPandu*, 15% of *Vata-Pittaj*, and 10% of *Vata-Kaphaj*. So, it can be concluded that Iron deficiency can be comprehended as *Vataj* and *KaphajPandu*.

- 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:







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 patients, treatment protocol will be differ.

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