



International Research Journal of Ayurveda & Yoga

An International Peer Reviewed Journal for Ayurveda & Yoga



SJIF Impact Factor : 5.69

ISRA Impact Factor : 1.318

ISSN:2581-785X

Review Article

Volume: 3

Issue: 12

An Ayurvedic Management Of *Pandu Roga* (Anaemia)- A Review

Dr. Preeti verma¹, Dr.Pramod Kumar Mishra², Dr.Barhmanand Sharma³, Dr. Vinod Kumar Gautam⁴

- 1- M.D Scholar, P.G Department Of Kayachikitsa, University Collage Of Ayurveda, Dr. Saravepalli, Radhakrishanan Rajasthan Ayurveda University, Jodhpur, Rajasthan
- 2- Associate professor and HOD, P.G Department Of Kayachikitsa, University Collage Of Ayurveda, Dr. Saravepalli, Radhakrishanan Rajasthan Ayurveda University, Jodhpur, Rajasthan
- 3- Assistant Pofessor P.G Department Of Kayachikitsa, University Collage Of Ayurveda, Dr. Saravepalli, Radhakrishanan Rajasthan Ayurveda University, Jodhpur, Rajasthan
- 4- Assistant Professor, P.G Department Of Kayachikitsa, University Collage Of Ayurveda, Dr. Saravepalli, Radhakrishanan Rajasthan Ayurveda University, Jodhpur, Rajasthan

ABSTRACT: Anaemia is defined as the qualitative or quantitative diminution of RBC and /or hemoglobin concentration to carry adequate oxygen to the body's tissue in relation to standard age and sex, and is clinically manifested by pallor. The clinical condition of anaemia especially iron deficiency anaemia can be correlated with *Pandu Roga* in *Ayurveda*. It is mentioned in all ayurvedic texts such as *CharakSamhita*, *Susruta Samhita*, *Astanga Hrudaya* etc. *Rasavaha* and *Raktavaha Srotas* are chiefly involved in pathogenesis of *Pandu roga*. The *Anna-rasa* nourishes all *Dhatu*s, while the *Kitta-bhag* is excreted out. The *Anna-rasa* is produced by the action of *Jatharagni* on *Ahara*. When there is hypo-functioning of *Jatharagni*, which produce improper *Anna-rasa* and its leads to the formation of abnormal *Rasa Dathu* and will consequently produce abnormal and deficient *Rakta Dhatu*. Thus the deficient of *Rakta Dhatu* resulting symptoms are appear like *Pandu varana*, *Rakta Alpata*, *Durbalta*, etc. In this series, ultimately there is diminution of the vital essence i.e. *Ojus*. As a result of above, the individual becomes *Nihsara* (insipid) and *Pandu* is produced. General principles of the management of any disorder in *Ayurveda* is divided in three parts, like *Nidana Parivarjan*, *Sansodhan Chikitsa*, *Sansaman Chikitsa*. In this review article we made an effort to explain the etiology, pathogenesis, signs & symptoms, investigations and *Ayurvedic* management of *Pandu Roga* (anaemia).

Keywords:- *Pandu*, *Rasavaha*, *Raktavaha Srotas*, *Ojus*, *Jatharagni*, anaemia

Article received on-7 Dec

Article send to reviewer on-7 Dec.

Article send back to author on-15 Dec.

Article again received after correction on -21 Dec.

Corresponding Author : Dr. Preeti verma, M.D
Scholar, P.G Department Of Kayachikitsa, University
Collage Of Ayurveda, Dr. Saravepalli, Radhakrishnanan
Rajasthan Ayurveda University, Jodhpur, Rajasthan,

Email, Id-

How to Cite the Article : Dr. Preeti verma, Dr.Pramod Kumar Mishra, Dr.Barhmanand Sharma, Dr. Vinod Kumar Gautam, An Ayurvedic Management Of *Pandu Roga* (Anaemia)- A Review, IRJAY, December : 2020 Vol- 3, Issue-12; 158-175, **Doi:** <https://doi.org/10.47223/IRJAY.2020.31206>

INTRODUCTION

Anaemia is a condition in which lack of enough red blood cells or the hemoglobin concentration within them is lower than normal. Hemoglobin is needed to carry oxygen and if have too few or abnormal red blood cells, or not enough hemoglobin, there will be a decreased capacity of the blood to carry oxygen to the body's tissues. The most common causes of anaemia include nutritional deficiencies, particularly iron deficiency, though deficiencies in foliate, vitamins B12 and vit. C are also important causes; hemoglobinopathies; and infectious diseases, such as malaria, tuberculosis, HIV and parasitic infections⁽¹⁾. Normal Hb %- in adult males 13.5-18 g/dl, in adult females 12-16 g/dl, in children 11-16 g/dl. If the percentage reduced beyond this level the condition is referred to as anaemia. *Acharya Charka* has been described the cause of *Pandu Roga* in *Charak Samhita Chikitsa Sthan* that

excessive intake of Alkaline, Sour, Hot, Saline, *Viruddha Aahara* and *Asatmya Bhojana*, *Nishpava*, *Masha*, *Pinyaka*, *Tila Taila* and When *Mana* affected with *Kama*, *Krodha*, *Chinta*, *Bhaya*, *Shoka*.

Similarly "*Pandu Roga*" is a disease which is large in number in today time, due to faulty dietary and life style, like increase use of junk food, hot and cold food and drinks, irregular eating habits and stressed working style. The formation and pathogenesis of a disease in *Ayurveda* is linked with the vitiation of *Tridosha (Vata, Pitta, Kapha)*. *Pandu Roga* is predominantly a result of vitiation of *Pitta Dosha* vitiation along with other *Doshas*, thus *Pandu Roga* is a *Tridoshaja* disease. The vitiation of *Pitta Dosha* leads to discoloration of the skin and pallor (*Pandu*) owing to reduced blood (*Alpa Rakta*) or vitiation of blood (*Vidushya Rakta*)⁽²⁾.

Epidemiology(Prevalence Of Anaemia) ³

Anaemia is a serious global public health problem that particularly affects young children and pregnant women. WHO estimates that 42% of children less than 5 years of age and 40% of pregnant are anaemic. At the country level, anemia among WRA and children under 5 years of age is a moderate-to-severe public health problem (20% or greater as defined by WHO) in the majority of WHO member states. The WHO Global Nutrition Target 2025 on anemia aims to reduce anemia in WRA by 50% by 2025. Based on a global prevalence of 29–38% anemia among WRA (non pregnant and pregnant, respectively) as of 2011, a reduction of 1.8–2.4 percentage points per year would be required to meet this target.

OBJECTIVES OF THE STUDY

Eradication of *Pandu Roga* is a challenge to all developing countries, where malnourishment is highly prevalent. Iron deficiency is the commonest nutritional deficiency and it may cause of *Anaemia*. Therefore *Ayurvedic* drugs are beneficial in such cases because herbo-mineral composition can positively influence health & quality of life. Ultimately goal of this study *Ayurvedic* herbal drug like *Shunthi*,

Marich, *Pippali*, *Haritaki*, *Vibhitaki*, *Amalaki*, *Nagarmotha*, *Chitarka*, *Vidanga* have *Rasayan*, *Hridhya* & *Dipan Pachan*, *Anuloman* & *Virechan* properties. And *Loha Churna* Work on iron deficiency.

Etiology And Pathophysiology of

Anaemia⁴ :- Anaemia is a decrease in the number of red blood cells (RBCs), which leads to a decrease in hematocrit and hemoglobin content. The RBC mass represents the balance between production and destruction or loss of RBCs. Thus, anemia can result from one or more of 3 basic mechanisms

1. Blood loss
2. Deficient erythropoiesis
3. Excessive haemolysis (RBC destruction)

1. **Blood loss** can be acute or chronic. Anemia does not develop until several hours after acute blood loss, when interstitial fluid diffuses into the intravascular space and dilutes the remaining RBC mass. During the first few hours, however, levels of polymorph nuclear granulocytes, platelets, and, in severe haemorrhage, immature WBCs and normoblasts may rise. Chronic blood loss results in

anemia if loss is more rapid than can be replaced or, more commonly, if accelerated erythropoiesis depletes body iron stores.

2. **Deficient erythropoiesis** has myriad causes. Complete cessation of erythropoiesis results in a decline in RBCs of about 7 to 10%/week (1%/day). Impaired erythropoiesis, even if not sufficient to decrease the numbers of RBCs, often causes abnormal RBC size and shape.

3. **Excessive hemolysis** can be caused by intrinsic abnormalities of RBCs or by extrinsic factors, such as the presence of antibodies or complement on their surface, that lead to their early destruction. An enlarged spleen sequesters and destroys RBCs more rapidly than normal. Some causes of hemolysis deform as well as destroy RBCs. Hemolysis normally causes increased reticulocyte production unless iron or other essential nutrients are depleted or there is erythropoietin deficiency.

Nidana of pandu⁽⁵⁾

The general etiology or *samanya nidana* of *Pandu Roga* is described in *Charaka*, *Sushruta* etc. treatises in which all the factors, mainly related to *Ahara*, *Vihara* and other disease are mentioned. They can be broadly classified into following groups^{5,6,7} (Cha. Chi. 16/8, Su.Su.44/3· A.S.Ni.13/3)

1. Causes related to *ahara*

Faulty diet :- *Asatmya Bhojana*, *Viruddha Bhojana*, *Atisevana* of *Amla*, *Katu*, *Lavana Rasa*, *Atisevana* of *Kshara*, *Ushna*, *Tikshna* and *Ruksha Ahara* causes *Mandagni*, *Pitta Prakopa* and *Vata Prakopa*. Thus, over indulgence into various *Rasas* is stated to be

the cause of *Pandu* in *Ayurveda*. Accordingly *Katu*, *Amla*, *Lavana Rasa* singly or combined produce the *Roga*. *Asatmya Bhojana* or *Viruddha Bhojana* may inhibit normal process by antistubstance and may lead to disturbance of the digestive and assimilative process. *Kashaya Rasa* as an aetiological factor of *Pandu Roga* is found only in *Harita samhita*. *Lavana Rasa* as a cause of *Pandu Roga* is mentioned by *Charaka* and *Sushruta* while *Amla Rasa* is mentioned by all Acharyas. *Amla Rasa* has also been said to possess the property of *Mamsa Vidaha* and causes *Kaya Shaithily*, *Lavana Rasa* vitiates the *Rakta*. According to *Sushruta*, excessive intake of *Amla Rasa* and *Lavana*

Rrasa produces *Kayashaitilya* and *Vaivarnata*.

2. Cause related of *vihara*- causes related to *Vihara* can be of three types.

(a) *Sharirika*

(b) *Mansika*

(c) *Pratikarmavaishamya*

(a) *Sharirika* - *Diwaswapana*, *Ratrijagarana*, *Ativyayama*, *Ativyavaya*, *Atidhvagamann*, *Adhika Sharma*, *Vegavarodha* and *Rituvashamya* are the *Sharirika* factors causing *Pandu*. Among these, *Diwasapana* causes *Pandu* by vitiation of *Kapha Dosha* mainly and *Ratrijagarana* by *Vata Prakopa*. Excessive activity in the form of *Ativyayama*, *Ativyavaya*, *Shramandhikya* causes excessive caloric output which out balance the intake of calories. Seasonal variations also upset the normal functions of the body

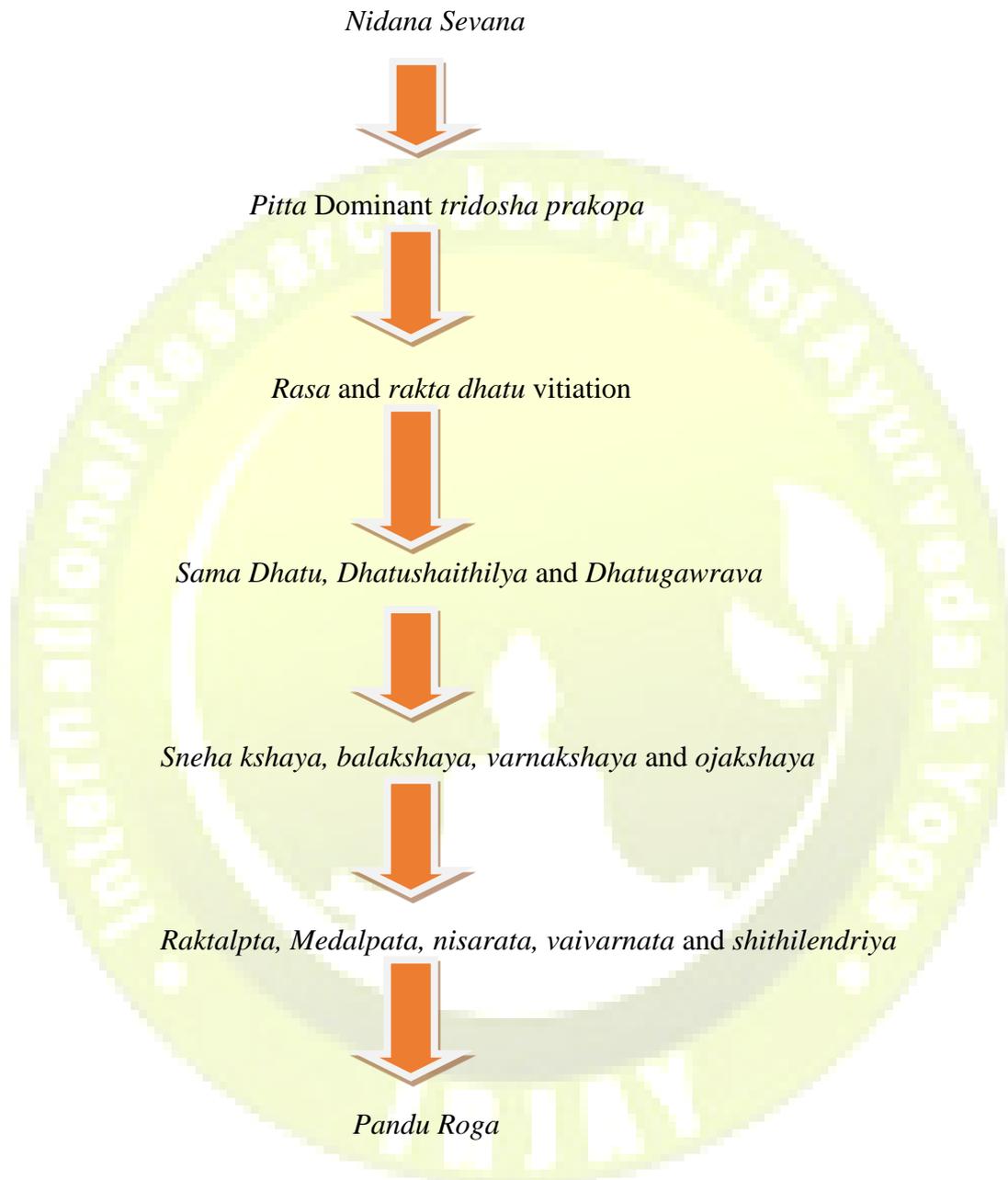
(b) *Mansika* - *Kama*, *Krodha*, *Bhaya*, *Chinta* and *Shoka* like *Manasa Bhavas* are the major of *Pandu Roga*. If a person takes balanced diet even at proper time but with

Chinta or worries, the digestive functions are disturbed and the food would not be properly digested. The result is *Mandagni* and deficient nutrition to *Dhatus* or *Dhatu Aposhana* which stated to be the cause of *Pandu Roga*.

(c) *Pratikarmavaishamya*- *Snehavibharam*, *Snehatiyoga*, *Amatisara Samgraha*, *Dushtaraktanigraha* in *Raktarsha* and *Vegavidharana* in *vamana karma* have also been taken as the cause of *Pandu Roga*.

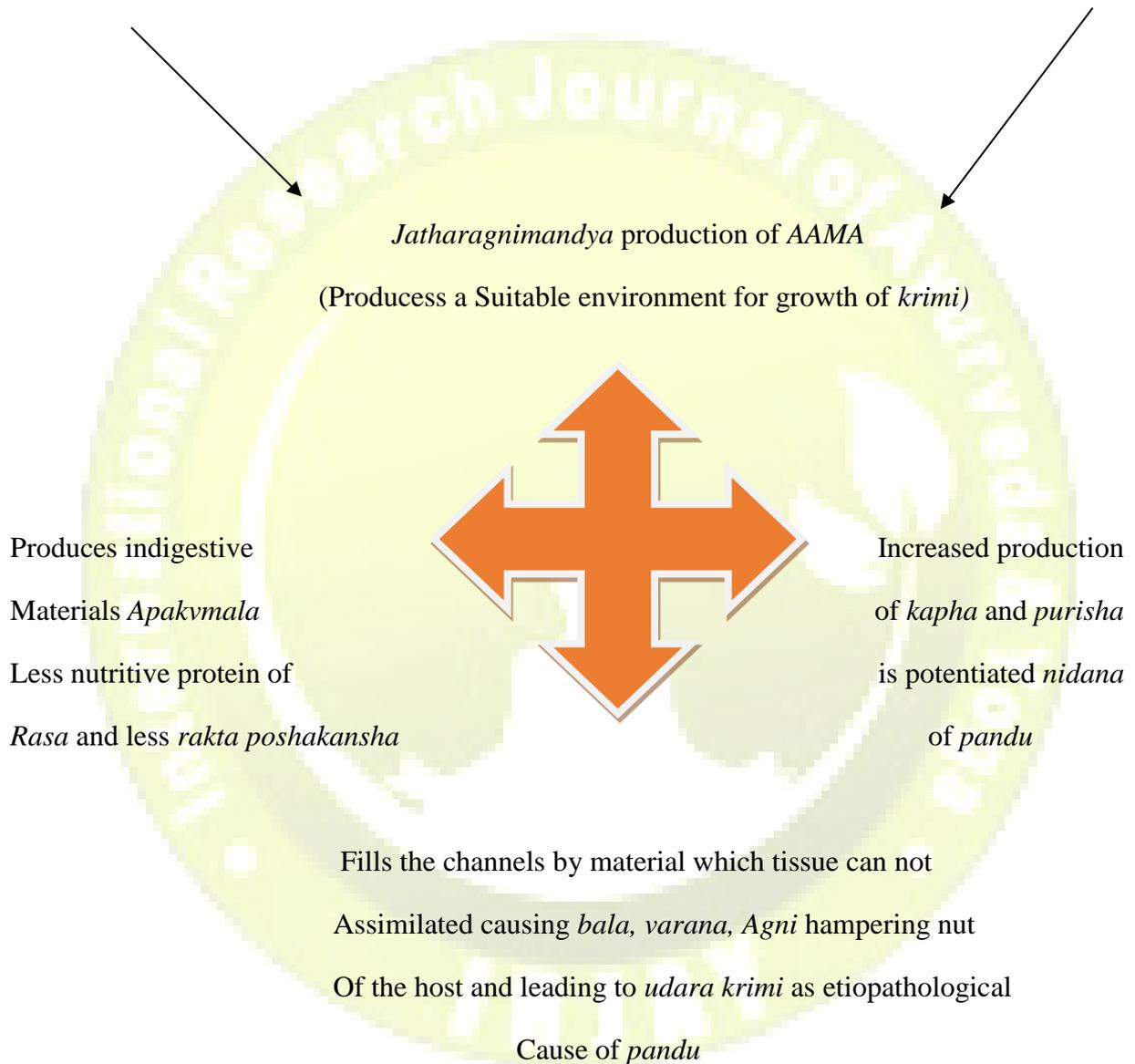
Other diseases (secondary causes): *Ayurvedic* literature has indicated a correlation of various diseases with *Pandu Roga* either as symptom or as *Upadrava*. So, all these can be causes of *Pandu* or *Nidanarthakara Rogas* of *pandu*. Some of which are *Raktatipravartana*, *Raktarsha*, *Raktarbuda*, *Asrigdara* or *Raktapradara*, *Arsha Raktarsha* or *Kaphajarsha*, *Rajyakashma*, *Punaravartaka Jwara* etc. which directly or indirectly vitiate *Vata*, *Pitta* and *Kapha* singly or in combination. Though *Pitta* plays a predominant role in the manifestation of *Pandu Roga*, *Vata* and *Kapha* are also involved in the process

SAMPRAPTI⁽⁸⁾



KRIMIJ PANDU SAMPRAPTI

Vayanjaka nidana
(esp. *kapha prakopaka* and *agnimandkara*) \rightleftarrows *Nidana* \leftleftarrows *Utpadak Nidana*
(Source of contamination) *Sevan* (Source of



SAMPRAPATI GHATAKA⁽⁹⁾

- *Udbhava – Amashaya*
- *Adhithana - Twak Masabhyantara*
- *Vyakti – Twak*
- *Sanchara- Dhamani*
- *Dosha - Sadhaka, Pachaka, Ranjaka, Alochaka Pitta, Vyana, Samana Vayu*
- *Dushaya - Twak, Rasa, Rakta, Mamsa, Meda*

- *Srotasa - Rasavaha, Raktavaha*
- *Sroto Dushti - Sanga, Vimarga Gamana*
- *Agni - Jatharagni, Dhatvagni*
- *Agni Dushti – Mandagni*

TYPES OF ANAEMIA⁽¹⁰⁾

There are more than 400 types of anemia⁽¹¹⁾, and they're divided into three groups which are based on etiology:

1 . Pathophysiological

- Anemia caused by blood loss.
- Anemia caused by decreased or faulty red blood cell production.
- Anemia caused by destruction of red blood cells.
- **Anaemia due to impaired red cell production**
- A disturbance due to impaired red cell production from various causes may produce Anaemia. These are as under:
- a) Cytoplasmic maturation defects –

- Deficient haem synthesis: Iron Deficiency Anaemia

- Deficient globin Synthesis: Thalassemic syndromes

- b) Nuclear maturation defects –

-Vitamin B12 and/or folic acid deficiency

- Megaloblastic Anaemia

- c) Haematopoietic stem cell, proliferation and differentiation abnormalities e. g. - Aplastic Anaemia

- Pure red cell aplasia

- d) Bone marrow failure due to systemic diseases (Anaemia of chronic disorders) e.g.-Anaemia of inflammation /infections disseminated malignancy.

- Anaemia in renal disease.

- Anaemia due to endocrine and nutritional deficiency (Hypo metabolic states)

- e) Bone marrow infiltration e. g.

- Leukaemias

- Lymphomas

- Myelosclerosis

- Multiple Myeloma

- f) Congenital Anaemia e. g

- Sideroblastic Anaemia

- Congenital dys erythropoietic

2. Morphologic anaemia

Cell size

1. Microcytic Anaemia (MCV<80 fL)

2. Macrocytic Anaemia (MCV>100fL)

3. Normocytic Anaemia (MCV b\w 80-100 fL)

Cell shape

Poikilocytes (Irregularly-shaped cells)

Spherocytes (Globular cells)

Drepanocytes (Sickle cells) Cell color

• **Cell color**

Generally refers to the staining characteristic which reflects the haemoglobin concentration. Terms that describe haemoglobin content end with "chromic."

1. Normochromic (Sufficient or normal amounts of haemoglobin)
2. Hyperchromic (Containing an unusually high concentration of haemoglobin in its cytoplasm)
3. Hypochromic (Containing an abnormally low concentration of haemoglobin)

These changes produce the following categories of anaemias:

- ✓ Macrocytic anaemias
- ✓ Microcytic-hypochromic anaemias
- ✓ Normocytic-normochromic anaemias.

Ayurvedic classification of Pandu Roga as per Acharya Charak

1. Vataja Pandu Roga
2. Pittaja Pandu Roga
3. Kaphaja Pandu Roga
4. Tridoshja Pandu Roga
5. Mridbhakshanaja Pandu Roga

Sign and symptoms of anaemia⁽¹²⁾

The symptoms of anaemia vary according to the type of anemia, the underlying cause, the severity and any underlying health problems, such as hemorrhaging, ulcers, menstrual problems, or cancer. Specific symptoms of those problems may be noticed first.

Symptoms common to many types of anemia include the following:

- Fatigue
- Weakness
- Pale or yellowish skin
- Irregular heartbeats
- Shortness of breath
- Dizziness or lightheadedness
- Chest pain
- Cold hands and feet
- Headaches

Puvarupa or Prodormal symptoms of Pandu Roga

- 1) Samanaya Purvarupa or,
- 2) Vishishhta Purvarupa

Purvarupa of *Pandu Roga* had been described as follows:

Acharya Charaka has described the premonitory sign and symptoms of *Pandu* are Palpitation, unctuousness, absence of sweating and fatigue.

Acharya Sushruta has described⁽¹³⁾ Cracking of skin, spitting, malaise, willing to eat dust, swelling on orbit, yellowish faeces & urine and indigestion.

Hridspandana is indicated as *Purva Rupa* of *Pandu Roga* by **Acharya Charaka** and **Vagbhatta** while it is only **Acharya Sushruta**, who has mentioned *Mrubhakshanaechchha* as *Purvarupa* of *Pandu*.

RUPA⁽¹³⁾

Vyakta Purvarupa is known as *Rupa*. Symptoms play most important role in proper diagnosis of the disease. Curability and incurability of the disease depends upon the severity of the presenting symptoms.

- *Karna kshweda* – sound in the ears, tinnitus
- *Hata analaha* – low metabolism, indigestion
- *Durbala* – weakness, fatigue
- *Sadana* – laxity of the body, lethargy
- *Anna dwesha* – aversion towards the food
- *Shrama* – tiredness
- *Bhrama* – giddiness
- *Gaatra shula* – body pains
- *Jwara* – fever
- *Shwasa* – dyspnoea, shortness of breath
- *Gourava* – heaviness of the body
- *Aruchi* – tastelessness
- *Peedita* – feeling as if the body has been compressed
- *Unmathita* – feeling as if the body has been churned
- *Shuna akshi kuta* – swelling around the eye sockets (orbit)
- *Sheerna lomaha* – falling or shedding of body hairs
- *Hata prabhaha* – lack luster
- *kopanaha* – feeling angry for simple cause, irritable nature
- *Shishira dweshi* – aversion towards cold
- *Nidraaluhu* – sleepiness
- *Shteevana* – excessive expectoration, spitting
- *Alpa vaak* – speaks less
- *Pindika udweshtana* – painful cramps in the calf muscles
- *Kati ruk, sadana* – low back pain and weakness
- *Uru ruk, sadana* – thigh pain, weakness

- *Pada ruk, sadana* – foot pain, weakness
- *Arohana ayasa* – feels breathless while climbing steps or going uphill.

➤ ***Vishistha Rupa-***

Acharya Charka had classified *Pandu Roga* in 5 types; on the basis of these types *vishesh rupas* are described)

- ***Vataj Pandu:-***

Krishna-panduta (black and pale yellow complexion), *Rukshata*, *Aruna-agatam* (Reddishness of body), *Angmarda* (malaise), *Ruja* (ache), *Toda* (Pricking pain), *Kampa* (tremor), *Parshvashiroruja* (pain in chest-head), *Varchashosh*, *Aashyavairashya* (distaste in mouth), *shopha*(inflammation), *Aanah* (constipation), *Bala-kshaya* (weakness).

- ***Pittaja Pandu:-***

Pita-haritabhata (complexion become yellow green), *Jwara*, *Daha*, *Trishna* (excessive thirst), *Murcha* (fainting), *Pipasa*, *Pitamutrashakruta* (yellow urine-stool), *Sweda*, *Sheetakamta*, *Katukasayta* (feeling pungent taste in mouth), *Ushnaamlanupashyata* (hot-sour things do not suit), *Vidahe vidagadhe anne* (burning sensation due to indigestion of food), *Daurgandhya* (bad smell of body), *Daurbalya* (weakness)

- ***Kaphaja Pandu:-***

Gaurava (heaviness), *Tundra* (Drowsiness), *Chhardi*, *Shvetavbhasta* (whitish complexion), *Praseka* (salivation), *Lomoharsha* (Horripilation), *Murchha* (Fainting), *Bhrama* (giddiness), *Klama* (mental fatigue), *Kasa*, *Swasa* (dyspnoea), *Alasya* (laziness), *Aruchi* (anorexia), *Vakaswaragraha* (obstruction in speech -voice), *Shukla mutra-akshivarchasa* (whiteness of urine-eye-stool), *Katurukshoshna kamta* (feeling of having pungent, Hot and dry things), *Swayathu*, *Madhurasyata* (sweet taste in mouth).

- ***Tridoshaja Pandu:-***

Signs and symptoms of vitiation of all the three *doshas* are present in this type of *Pandu*.

- ***Mridbhakshanaja Pandu:-***

Bala-varna-agani nash (loss of strength, complexion and power of digestion metabolism), *Ganda-Akshikuta-bhru-pad-nadhi-mehan shotha* (edema on cheek, eye socket, eyebrow, feet, umbilicus, Penis), *Krimi koshta* (Appearance of worm in *koshta*, intestine or via stool), *Atisaryet mala sasrukakapha* (loose motion with blood and mucus).

GRADING OF ANAEMIA⁽¹⁴⁾

Grade	Severity	Hemoglobin (g/dl)
0	Normal	12.0-16.0(women) 14.0-18.0(men)
1	Mild	10.0-lower limit of normal
2	Moderate	8.0-<10.0
3	Severe	6.5-<8
4	Life threatening	<6.5
5	Death	Death

WHO Hemoglobin thresholds used to be define anaemia⁽¹⁵⁾

Age or gender group	Hb threshold(g/dl)
Children (0.5-5.0 yrs)	11.0
Children (5-12 yrs)	11.5
Teens (12-15 yrs)	12.0
Women, non-pregnant (>15yrs)	12.0
Women, pregnant	11.0
Men (>15yrs)	13.0

DIAGNOSIS FOR ANAEMIA**1. Physical examination**

- Examine for bleeding.
- Examine tongue, nails, or inner lining of your eyelids are pale.
- Examine fingernails to see whether they are pale or brittle, and how quickly they refill with blood.
- Listen heart rate for rapid or irregular heartbeats.

- Listen lungs sound for rapid or uneven breathing.
- Feel abdomen to check the size of liver and spleen.

2. laboratory investigation

- **Complete Blood Cell Count (CBC)** to see, red blood cell counts, hemoglobin or hematocrit levels, or mean corpuscular volume (MCV) that would suggest anemia.

- **Iron** to measure the amount of iron in blood. The level of iron in blood may be normal even if the total amount of iron in body is low. For this reason, other iron tests are also done.(The serum iron reference range are male 80-180 mcg/dl or 14-32 µmol/L (SI units) female 60-160 mcg/dlor 11-29 µmol/L (SI units) newborn 100-250mcg/dl child 50-120mcg/dl⁽¹³⁾

- **Ferritin measure** to find out how much of body’s stored iron has been used. Ferritin is a protein that helps store iron in your body.
- **Reticulocyte count** to see if have lower than normal numbers of these very young red blood cells.
- **Peripheral smear** to see if red blood cells look smaller and paler than normal when viewed under a microscope.

- **Different tests help diagnose iron-deficiency anemia.** In iron-deficiency anemia, blood levels of iron will be low or less than 10 micromoles per liter (mmol/L) for both men and women. Normal levels are 10 to 30 mmol/L. Levels of ferritin will also be low, or less than 10 micrograms per liter (mg/L) for both men and women. Normal levels are 40 to 300 for men and 20 to 200 for women.

2. Test for gastrointestinal bleeding

- **Fecal occult blood test**
- **Upper endoscopy**
- **Colonoscopy etc.**

CHIKITSA (treatment)⁽¹⁶⁾

The process that balances the disturbed *dhatu*s of the body is called *chikitsa*. General principles of management of any disorder in Ayurveda are divided in three parts.

- (1.)*Nidana Parivarjan*
- (2.)*Sansodhana*
- (3.)*Sansaman*

(1.)Nidana parivarjan

Nidana parivarjan is the first line of treatment in *Nidana* of particular disease avoided at proper time, may help in

arresting the pathogenesis of the disease. So, the first step to be taken by Anaemia is to forsake *Nidana* i.e *virudhahara*, excess intake of *Amla rasa*, *lawan*, *vidgdha ahara*, *vegadharna* etc.

(2.) *Sansodhan*¹⁷

Line of treatment of *Pandu Roga*

- Line of treatment in General -The patient suffering from *Pandu Roga* should be given emetic and purgative drugs for the *shodhana* of the body by the elimination of *Doshas*. After *Shodhana*, patient should be given wholesome food containing.
- Old *Shali* type of rice, *Yava*, *Godhuma* Mixed with the *Yusha* of *Mudga*, *Adhaki* and *Masura*. *Mamsa Rasa* of *Jangala* Animals.

After that, specific medicines on the basis of the aggravated *Doshas* should be administered.

Ghrta for *Shehana* For the purpose of oleation, the patient suffering from *Pandu* should be given *Panchagavya Ghrta*, *Maha Tikta Ghrta* and *Kalyanaka Ghrta*.

- Most suitable Drugs for *Vamana Karma Acharya Charaka* have mentioned “*Krutavedhana*” for *Vamana Karma* in case of *Pandu*.
- Most suitable Drugs for *Virechana Karma Virechana Yoga* in General after the patient is properly oleated, he should be given purgation therapy frequently with the following recipes.
 - ✓ Milk added with cow’s urine.
 - ✓ Milk alone.
 - ✓ Luke-warm infusion of *Danti*, Sprinkled with the powder of one *Anjali* of fruit of *Gambhari* or infusion of *Danti* with paste of one *Anjali* of *Draksha*.
 - ✓ With *Haritaki Churana*
- *Virechana Yoga* for specific types of *Pandu Virechana Yoga*
 - ✓ For *Paitika* type of *Pandu* The patient suffering from *Paittika* type of *Pandu Roga* should take half *Pala* of the powder of *Trivrita* mixed with one *Pala* of sugar.
 - ✓ *Virechana Yoga* for *Kaphaja* type of *Pandu* The patient suffering from *Kaphaja* type of *Pandu Roga* should take *Haritaki* impregnated with cow’s urine.
 - ✓ -*Snuhi Kshira*

-As per *Acharya Vagbhatta*, patient should keep on a medicament consisting of only milk and cow's urine together for a period of 15 days.

(3.) SANSAMNA CHIKITSA

- Line of Treatment in specific types of *Pandu*
- *Vatika* Type of *Pandu*, the therapy should be dominated by *Sneha Dravya*,
- *Paittika Pandu*, it should be dominated by bitter and cooling drugs,
- *Kaphaja* type of *Pandu*, the therapy should be dominated by *Katu, Ruksha* and *Ushna* drugs
- *Sannipatika* Type of *Pandu*, all the above mentioned ingredients should be combined. Means, depending upon the *Doshas*, different types of treatment should be given to the patient suffering
- from *MridBhakshanaja Pandu*, the therapy should be *Nidana parivarjan*, *Kirmi Upchara*, and *Balyakarita*

Different type of treatment for *Pandu*

1. Herbal Products: - *Guduchi, Pippali, Haridra* etc.
2. Mineral Products: - *Lauha, Mandoor, Makshika, Gairika, Shilajita* etc.

. Animal Products: - *Pravala, Mukta, Shankha, Anjana, Takra, Gomutra, Ajasakr.*

• YOGA

- *Rasa/Bhasma/Loha/Mandoor:-*
Navayasa Loha, Punarnava mandoor, Dhatri Loha, Loha Bhasma
- *VATI: - Mandoor Vataka, Punarnava Mandura, Shilajatu Vatak, Kutajadi Vataka, Bibhitakadi Vataka, Panchanana Vatika, Laghushiva Gutika*
- *CHURNA:- Navayasa Churna, Ajasakritadi churna, Khandasamaka churna, Amalaki churna, Triphala Churna, Vishaladi Churna*
- *GHRITA:- Katukadhya Ghrita, Pathya Ghrita Danti Ghrita, Draksh Ghrita, Haridradi Ghrita, Dadimadhya Ghrita, Brihatyadi Ghrita*
- *Kwath:- Punarnavasthak kawath, Phalatrikadi kwath*
- *ASAVA ARISTA:- Lauhasava, Manduarista, Dhattrayarista, Bijakarisa, Gaudarista*
- *AVALEHA:- Daryadi Leha, Dhatri Avaleha, Vidangadhya*
- *Rasayana:- Yogaraj rasayana, Triphala rasayana, Loha rasayana, Mandoor rasayana, Gaumutra Haritaki, Amalaki rasayana etc.*

- *Kalpa chikitsa:- Loha parpati, vijay parpati.*

Pathya –Apathy

- **Pathyahara-** *Yava, Shali, Mung-masur, Kusmand, Patola, Palak, Amalaki, Haridra, Gajar, Haritaki, Kela, Methi, Choulai, Madhu, Ghrita, Takra, Shunthi, Gau Mutra, Jangle mans rasa*, etc.
- **PathyaVihara-** Always be happy, *Mardu virechana*
- **Apathyahara-** *urad dal, Teel, Hingu, Tambul, sarason, Sura, Lawan, Amal, Mastsya, Ati Jaal Pana, etc.*
- **Apathya vihara-** *Atapsewnam, Ati mathuna, Dhumrapana, Divaswapana, Ativayaama, Vegvidharana, Chinta, Khrodha, etc.*

COMPLICATIONS OF ANAEMIA

- The most serious complications of anaemia arise from tissue hypoxia, shock, hypotension, or coronary and pulmonary insufficiency can occur. This is more common in older individuals with underlying pulmonary and cardiovascular disease . In acute conditional anaemia due to the excess

blood loss may become life threatening. In Ayurveda also describe that if the condition of *Pandu* are persist and person who is suffirng from *Pandu Roga* taking continuously *Apathya Ahar* and *Vihara* it may leads to kamala and its complication.

DISCUSSION AND CONCLUSION

World's population is increasing at a rapid rate, due to which most of the people are living in un-hygienic, under-nourishing conditions and facing various effects of stress and strain factor. Illiteracy is also a problem in developing countries like India due to which great majority of people are living under poverty line, who cannot get quantitatively and qualitatively sufficient diet. Not only poverty and malnutrition play a vital role in etiology of anaemia, but several other etiological and predisposing factors like chronic intestinal worm infestation and mal absorption are similarly responsible for it. Anaemia can be correlated with *Pandu* by its similarity of signs and symptoms. Different Conditions of *Pandu* had been mentioned by all *Aacharyas*. This shows that disease was

prevalent from ancient period. In this disease *Pitta Pradhana Dosha* vitiates first and goes into *Dhatu* and thus producing *Sithilta* in *Dhatus*. It produces *Dhatukshaya* which leads to *Ojakshaya*. In this condition person become *Nishara*.

According to modern medical science when we compare it with anaemia we can see that in anaemia there is deficiency or deformity of hemoglobin. When hemoglobin

destruction is more it produces bilirubin and biliverdin in large amount. This leads to the development of Jaundice. This shows that *Pandu Roga* and *Kamla* are given in the same chapter due to its relation with each other. *Aacharya Charaka* had mentioned about *Sodhana* in this disease first.

As by this process nutritive diet can be absorbed in body through patent *Srotasa* so as to make proper *Rasaadi Dhatu*.

Acknowledgement :- Nil

Financial Assistant:- Nil

Conflict of interest :- Nil

REFERENCES:

- 1-www.who.in Health Organization prevalence report – Anaemia. Downloaded on 12 oct.2020
- 2- Shir Satyanarayana Shastri Charaka Samhita, Vidhyotini Vyakhaya, , Published by Chaukhamba Bharti Academy
3. Camila M. Chaparro and Parminder S. Suchdev article on Anaemia epidemiology, pathology, and etiology in low- and middle- income countries ,Annals of the New York Academy of Science WWW. ncbi. Nlm. Nih. Gov.
4. www.merckmanuals.com , anemia pathogenesis and prevalence .
5. Shir Satyanarayana Shastri Charaka Samhita, Vidhyotini Vyakhaya, , Published by Chaukhamba Bharti Academy (Cha. Chi. 16/8,⁽⁵⁾)
6. Sri Dalhanacharya, Sushruta Samhita with the Nibandha Samgraha Commentary Chaukhambha Surbharati Prakashan, Varanasi. (Su.Su.44/3⁽⁶⁾)
7. Edited by Vd. Anant Damodar Athavale, Ashtanga Samgraha composed by Vagbhata with the commentary in Indu, Ayurvedhya Mudranalaya, Pune III. (A.S.Ni.13/3⁽⁷⁾)
8. Prof. Ajay Kumar Sharma kayachikitsa composed, Published by Chaukhamba orientalia , delhi partv 2nd Pandu Roga
9. Prof. Ajay Kumar Sharma kayachikitsa composed, Published by Chaukhamba orientalia , delhi partv 2nd Pandu Roga
10. Dr. Hetal Vays , Dr. Rita Khagram Review Article on Pandu W.S.R to Iron deficiency anaemia world journal of pharmaceutical science ,volume 5, 2016, 3/456
11. www.webmd.com, anemia in south east asia its pathogenesis and causes.
12. www.mayoclinic.org, anemia prevalence, pathogenesis, diagnosis, and treatment.
- 13 . Prof. Ajay Kumar Sharma kayachikitsa composed, Published by Chaukhamba orientalia , delhi partv 2nd Pandu Roga
14. Harrisons Manual of Oncology 2nd ED.
15. www.who.in Health Organization prevalence report – Anaemia. Downloaded on 12 oct.
16. Shir Satyanarayana Shastri Charaka Samhita, Vidhyotini Vyakhaya, , Published by Chaukhamba Bharti Academy (Cha. Chi.
17. Prof. Ajay Kumar Sharma kayachikitsa composed, Published by Chaukhamba orientalia , delhi partv 2nd Pandu Roga