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 CharakSaḥmita, Susruta Samhita, Astanga Hrudaya etc. Rasavaha and Raktavaha Srotas are chiefly involved in pathogenesis of Pandu roga. The Anna-rasa nourishes all Dhatus, 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, Durballa, 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
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)

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% anaemia 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 Pathophylogy of Anaemia:

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 norm oblasts 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 enlarge 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**

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

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 antisubstance 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 and causes Kaya Shaithily, Lavana Rasa vitiates the Rakta. According to Sushruta, excessive intake of Amla Rasa and Lavana
Rrasa produces Kayashaithilya 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, Atidhwagamanrrn, Adhika Sharma, Vegavarodha and Rituvaihsmya 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 Ativyayma, 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 Dhatu and Dhatu Aposhana which stated to be the cause of Pandu Roga.

(c) Pratikarmavaishamya - Snehavibharam Snehatiyoga, Amatisara Samgraha, Dushtaraktanigriha 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, Asrigdrara 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

Nidana Sevana

Pitta Dominant tridosha prakopa

Rasa and rakta dhatu vitiation

Sama Dhatu, Dhatushaithilya and Dhatugawrava

Sneha kshaya, balakshaya, varnakshaya and ojakshaya

Raktalpta, Medalpata, nisarata, vaivarnata and shithilendriya

Pandu Roga
KRIMIJ PANDU SAMPRAPTI

Vayanjaka nidana (esp. kapha prakopaka and agnimandkara) → Nidana → Sevan → Utpadak Nidana (Source of contamination)

Jatharagnimandya production of AAMA
(Producess a Suitable environment for growth of krimi)

Produces indigestive materials Apakvmala
Less nutritive protein of Rasa and less rakta poshakansha

Fills the channels by material which tissue can not
Assimilated causing bala, varana, Agni hampering nut
Of the host and leading to udara krimi as etiopathological
Cause of pandu

SAMPRAPATI GHATAKA

➢ Udbhava – Amashaya
➢ Adhisthana - 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

There are more than 400 types of anemia, 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 and 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.

**Sign and symptoms of anaemia**

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**

---

**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
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), Daurgandhyla (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), Vaka-swaragraha (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.

- Mriddhakshanaja 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 koshtha, intestine or via stool), Atisaryet mala sasrukakapha(loose motion with blood and mucus).
GRADING OF ANAEMIA\textsuperscript{(14)}

<table>
<thead>
<tr>
<th>Grade</th>
<th>Severity</th>
<th>Hemoglobin (g/dl)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Normal</td>
<td>12.0-16.0(women)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14.0-18.0(men)</td>
</tr>
<tr>
<td>1</td>
<td>Mild</td>
<td>10.0-lower limit of normal</td>
</tr>
<tr>
<td>2</td>
<td>Moderate</td>
<td>8.0-10.0</td>
</tr>
<tr>
<td>3</td>
<td>Severe</td>
<td>6.5-8</td>
</tr>
<tr>
<td>4</td>
<td>Life threatening</td>
<td>&lt;6.5</td>
</tr>
<tr>
<td>5</td>
<td>Death</td>
<td>Death</td>
</tr>
</tbody>
</table>

WHO Hemoglobin thresholds used to be define anaemia\textsuperscript{(15)}

<table>
<thead>
<tr>
<th>Age or gender group</th>
<th>Hb threshold(g/dl)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children (0.5-5.0 yrs)</td>
<td>11.0</td>
</tr>
<tr>
<td>Children (5-12 yrs)</td>
<td>11.5</td>
</tr>
<tr>
<td>Teens (12-15 yrs)</td>
<td>12.0</td>
</tr>
<tr>
<td>Women, non-pregnant (&gt;15yrs)</td>
<td>12.0</td>
</tr>
<tr>
<td>Women, pregnant</td>
<td>11.0</td>
</tr>
<tr>
<td>Men (&gt;15yrs)</td>
<td>13.0</td>
</tr>
</tbody>
</table>

**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 50-120 mcg/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 dhatus 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

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.

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

- 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.


- YOGA
  - Rasa/Bhasma/Loha/Mandoor:- Navayasa Loha, Punarnava mandoor, Dhatri Loha, Loha Bhasma
  - VATI: - Mandoor Vataka, Punarnava Mandura, Shilajatu Vatak, Kutajadi Vataka, Bibhitakadi Vatak, 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, Dhatarayarista, Bijakaris, 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.

➢ Pathya Vihara- Always be happy, Mardu virechana

➢ Apathyahara- urad dal, Teel, Hingu, Tambul, sarason, Sura, Lawan, Amal, Mastysya, 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 suffering 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.

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