A CONCEPTUAL STUDY OF PANDU ROGA AND ROLE OF DARVYADI LAUHA AND VASADI KASHAYA IN ITS MANAGEMENT- A REVIEW ARTICLE

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ABSTRACT
Ayurveda is the science of life which focuses on maintenance of positive health in healthy and eradication of ailments in diseased through its holistic approach, lifestyle practices, dietary habits and safer medications. Malnutrition either due to inadequate dietary intake or lack of balanced diet and population explosion in today’s world has lead to the development of various diseases and Pandu Roga is one such disease. Pandu is a Varnopalakshita Vyadhi wherein paleness is pathognomonic. Pandu Varna which resembles the colour of pollen grains of Ketaki flowers. Anaemia is defined as a state in which blood haemoglobin level is below the normal range for patient’s age and sex. Samshodhana and Samshamana Chikitsa in the form of internal and external medicine is the line of management of Pandu Roga. Samshodhana is done by Vamana and Virechana using Snigdha and Teekshana drugs. Samshamana Chikitsa includes drugs like Navayasa Lauha, Dhatri Lauha, Amalaki Churna, Phaltrikadi Kwatha etc.

KEYWORDS: Pandu Roga, Darvyadi Lauha, Vasadi Kashaya, Anemia.

INTRODUCTION
Pandu Roga is mainly concerned with the vitiation of Pitta Dosha which in turn vitiates Rakta and other Dhatus. Since Pandu Roga is a Pitta Pradhana Vyadhi and Pitta is responsible for normal colour of the body, so, if it gets vitiated, impairment of colour and complexion (Panduta) occurs. Samanya Lakshanas of Pandu Roga as per Ayurvedic classics are Rakatalpata, Medalpata, Nissarta, Vaivarnya, Ojogunakshaya, Daurbalya, Aruchi, Bhrama, Shithilaendriya etc. Pandu Roga as mentioned in Ayurvedic texts has very close resemblance with the description of anaemia available in modern texts in terms of Nidana, Samprapti, Lakshanas and Chikitsa.

The commonest type of anaemia is Iron Deficiency Anaemia which is most prevalent nutritional deficiency disease in both the developed and developing countries with its prevalence rate higher in children and women of child bearing age. Globally, 30% of the total world population are anaemic and half of these have Iron Deficiency Anaemia. According to WHO, 50% of children and women and 25% of men in developing countries like India are suffering from Iron Deficiency Anaemia.

REVIEW OF LITERATURE
Definition of Pandu: The different definitions of Pandu Roga as stated by various authors are as follows:
• The disease in which a deep yellow colour is imparted to the patient is known as Pandu Roga.
• Pandu Roga is a disease which is characterized by Pandu varna.
• Disease in which Pandubhava is more intermed is Pandu Roga.
• The disease is named Pandu Roga wherein Pandu, Harita and Haridra varnas appear in the skin.

Definition of Anaemia
Anaemia’ is derived from a greek word ‘anaimia’, meaning lack of blood. Anaemia refers to a state in which the level of haemoglobin in the blood is below the normal range appropriate for the age and sex. In other words, anaemia is defined as reduction in the concentration of circulating haemoglobin or oxygen carrying capacity of blood below the level that is expected for healthy persons of same age and sex in the same environment. According to the World Health Organization (WHO), anaemia is defined as a haemoglobin level of less than 13 g/dl in men and less than 12 g/dl in women.
Nidana (Etiology)
The etiological factors explained for all types of Panda Roga can be categorized as follows: Ksharatisevana, Amlatiyatevana, Lavanatiyatevana, Atyushnatisevana, Asatmya bhojana, Viruddhahara, Katuatiyatevana, Kashyatiyatevana, Tikshanatiyatevana, Rukshtisevana, Vidaagdhanna, Nispava, Masa, Pinyaka Til Taila Atiitsevana, Mrida bhakshana, Madhyya attisevana, Ativayama, Ativayava, Atinidra, Vegavrodha, Divwaspwa, Ritu vaishamnya, Ratrijagrana, Krodha, Chinta, Bhuya, Shoka, Kama.

CLASSIFICATION
A) Aetiological classification
Anaemias due to blood loss:
- Trauma
- Postpartum haemorrhage
- Hookworm infestation
- Bleeding peptic ulcer
- Hemorrhoids
- Excessive menstrual loss.

Anaemias due to impaired red cell production
Deficiency:
- Iron Deficiency Anaemia.
- Megaloblastic Anaemia due to deficiency of folate or vitamin B12.
- Anaemia of chronic diseases like chronic liver disease, chronic renal disease.
- Sideroblastic Anaemia.
- Aplastic Anaemia.
- Anaemia in endocrine disorders like hypothyroidism, hypoadrenalism, hypopituitarism, reduced erythropoietin due to renal failure.
- Myelophthisic Anaemia (Anaemia due to replacement of marrow by metastatic carcinoma, leukaemia, lymphoma, infections, storage disorders etc.).
- Congenital dyserythropoietic Anaemia.

Anaemias due to excessive red cell destruction (Haemolytic Anaemia)
Abnormality intrinsic to red cells:
a) Defects in red cell membrane:
   - Hereditary spherocytosis
   - Hereditary elliptocytosis
b) Defect in haemoglobin:
   - Thalassemias
   - Sickle cell disease
c) Defect in enzymes:
   - Glucose 6-phosphate dehydrogenase deficiency
   - Pyruvate kinase deficiency
   - Abnormality extrinsic to red cells:
a) Immune haemolytic Anaemia:
   - Autoimmune
   - Drug-induced
b) Mechanical haemolytic Anaemia
   - Cardiac
   - Microangiopathic
   - Direct action of physical, chemical or infectious agents
   - Hypersplenism

B) Morphological Classification
- Macrocytic Anaemia
- Microcytic Anaemia
- Normocytic Anaemia

Poorvaroopa of Pandu Roga as explained by different Acharyas are summerised below

Samanya Lakshana of Pandu Roga

Clinical features of Anaemia
Symptoms
- Weakness, Fatigue, Dyspnoea, Palpitations.
- Dizziness, Headache, Tinnitus, Vertigo
- Anorexia, Indigestion, Nausea, Bowel disturbances.
- Irritability, Sleep disturbances, Lack of concentration
- Paraesthesia in fingers and toes

Signs
- Pallor of skin, palms, oral mucous membrane, nail beds and palpebral conjunctiva.
- Oedema
- Signs of hyperdynamic circulation like tachycardia, ejection systolic murmur, best heard over the pulmonary area, cardiac dilatation and cardiac failure.

SAMPRAPTI
Samprapti of Panda Roga is as follows:
The pathogenesis of Panda Roga is mainly concerned with vitiation of Pitta Dosha which in turn vitiates Rakta and other Dhatas leading to Panduta. Pitta Dosha is the Pradhana Dosha involved in Panda Roga but all its five fold functions are affected. Since the main seat of disorganization is Rakta, the Ranjana function of Pitta is to bear the brunt.

Nidana Sevana causes Tridosha Prakopa especially Pitta Dosha. Aggravation of Pitta located in Hridaya takes place, which then forcefully propelled by Vayu enters Dusha Dhannis and circulates in the entire body. Being located between Twaka and Mamsa, this aggravated Pitta vitiates Kapha, Vayu, Asrak, Twacha and Mamsa,
as a result of which different types of discolorations like Pandu, Haridra and Harita appear in the skin. This is known as Pandu Roga. Thus, vitiated Pitta Dosha leads to Dhatura-Shaithilya, Dhatura-Gaurava, as a result Balakshaya, Ojoshaya and Varnanasha occur.

**PATHOGENESIS CHIKITSA**

General principles of management of Pandu Roga are:

- Samshodhana
- Samshamanam

In Pandu Roga, Samshodhana is done by Vanama and Virechana using Snigdha and Teekshana drugs.

Further Acharya Charaka has explained Hetu Viparita Chikitsa, i.e. for Vattika type of Pandu, therapy should be dominated by Snigdha Dravyas. In Paippitaka Pandu Roga, Tikta and Sheeta Dravyas while in Kaphaja Pandu Roga, Katu, Tikta and Ushna drugs should be used and all the above types of Dravyas can be used in Sannipataja Pandu Roga.

Shodhana Chikitsa of a disease is preceded by Snehana and Mrudhandu Swedana.

**Vamana**

Vamana should be done in Kaphaja Pandu Roga with Katu, Tikta and Ushna Dravyas. In Mridabhakshanajanya Pandu, vanama should be done with Teekshana drugs to remove the ingested Mrittika.

According to Acharya Charaka, Madanaphala is Sarvasreshtha Vanaka Dravya. Dhamargava is a good Vamaka Dravya for Pandu Rogi. Acharya Dalhana says that in Pandu Roga, Vamana karma should be done according to Kala, Ritu, Dosha and Prakriti.

**Virechana**

After proper Snehana, patient should be given Virechana with:

- Gomutra mixed with Godugdha
- Godugdhu alone
- Danti Kwatha sprinkled with Kashmarya powder.

In Paippitaka Pandu Roga, Trivrit powder mixed with Sharakra and in Kaphaja Pandu, Haritaki impregnated with Gomutra should be given for Virechana. According to Bhaishajya Ratnavalli, Haritaki mixed with honey, Ghrita cooked with Rajni or Triphala Kalka or Trivrit can be given for purification.

**Samshamanam**

Shamana Chikitsa includes various types of drugs and specific lifestyles which can be used according to Dosh, Dushya, Nidanadi involved in the manifestion of the disease. A lot of single and compound drugs like herbal, mineral and herbo-mineral preparations are mentioned in Ayurvedic classics for Pandu Roga.

- **Single Drugs:** Amalaki, Haritaki, Bibhitaka, Chitraka, Vasa, Vidanga, Katuki, Lauha bhasma, Mandura bhasma, Nayagrodhadi varga, Salsaradi varga drugs.
- **Rasauhadi:** Pandusudana Rasa, Anandodaya Rasa, Pranavallabha Rasa, Pandupanchanana Rasa, Chandrasuryatmaka Rasa.
- **Lauha/Mandura:** Navayasau Lauha, Darvyadi Lauha, Nisha Lauha, Dhatri Lauha, Vidangadi Lauha, Ashtadhanga Lauha, Punarnavadi Mandura, Vajravataka Mandura, Trushanadhi Mandura.
- **Vati/Vataka:** Mandura Vataka, Arogyavardhini Vati, Shilajatu Vataka.
- **Churna:** Amalaki Churna, Navayasura Churna, Vishaladi Churna, Triphala Churna.
- **Kwatha:** Phalatrikadi Kwatha, Punarnavashtaka Kwatha, Vasadhi Kashaya, Triphala Kwatha.
- **Asava/Arishta:** Dhatryarishta, Lauhasava, Vidangasava, Gaurarishtha, Drakshasava, Kumaryasava.
- **Avaleha:** Dhatryavaleha, Darvyadi Leha, Drakshavaleha, Vidangdwy-avaleha, Amlakyaavaleha.
- **Ghrita:** Cadimadhi Ghrita, Danti Ghrita, Rohitaka Ghrita, Palhya Ghrita, Draksha Ghrita, Vyoshadya Ghrita, Haridradi Ghrita.
- **Rasayana:** Yograjya Rasayana, Triphala Rasayana, Amalaki Rasayana, Lauha Rasayana, Gomutra Haritaki, Guda Haritaki.

**MANAGEMENT OF IRON DEFICIENCY ANAEMIA**

The management of Iron Deficiency Anaemia consists of two essential principles:

- Treatment of the underlying cause
- Correction of Iron deficiency

Once the diagnosis of Iron

Deficiency Anaemia and its cause is made, and a therapeutic approach is charted, there are three major approaches:

**Oral Iron Therapy**

In the patient with established Iron Deficiency Anaemia who is asymptomatic, oral iron supplementations are usually adequate. For iron replacement therapy, upto 300mg of elemental iron per day is given, usually as three or four iron tablets (each containing 50 to 65 mg elemental iron) given over the course of the day. **Ferrous sulphate** 200 mg 8-hourly (120 mg of elemental iron per day) is more than adequate and should be used for 3-6 months to replenish iron stores. Occasionally, patient is intolerant to ferrous sulphate, with dyspepsia and altered bowel habit. In this case, a reduction in dose to 12 hourly or **ferrous gluconate** (70 mg of elemental iron per day) should be given.

**Parenteral iron therapy**

The parenteral preparations of iron include:

- Iron dextran (50 mg elemental iron per ml); IM or IV
- Iron sorbitol citrate (50 mg/1.5 ml); IM
• Iron sucrone (100 mg in 5 ml; IV, slow injection over 5 mins or as infusion in 100 ml saline over 30 mins.
• Sodium ferric gluconate (12.5 mg in 10 ml); IV, slow injection over 10 mins or as infusion in 100 ml saline over 1 hour.

Parenteral iron is usually given intramuscularly into the buttocks by Z-track technique to avoid staining of skin. Iron dextran is the oldest preparation in use but is associated with life-threatening anaphylactic reaction in 0.7% cases when it is administered intravenously.

Red Cell Transfusion
Transfusion therapy is reserved for those individuals who have symptoms of anaemia, cardiovascular instability and continued and excessive blood loss from whatever source, and those who require immediate intervention.

Packed red blood cells, the most commonly transfused blood component, can restore the blood's oxygen-carrying capacity. Red blood cell transfusions are given to raise the haematocrit level in patients with anaemia or to replace losses after acute bleeding episodes. Not only do transfusions correct the anaemia accurately, but the transfused red cells provide a source of iron for reutilization.

DISCUSSION

Probable Mode of Action of Drugs
Action of a medicine mainly depends upon its subtle constituents like Rasa, Guna, Virya, Vipaka, Prabhava. When the Rasadis are of equal strength, the Vipaka dominates over Rasa, both Rasa and Vipaka are superceded by Veerya while Prabhava overcomes all of them.

Darvyadi Lauha
Ingredients of Darvyadi Lauha are Darvi (Berberis aristata), Amalaki (Emblica officinalis), Haritaki (Terminalia chebula), Bibhitaka (Terminalia bellirica), Pippali (Piper longum), Shunthi (Zingiber officinale), Maricha (Piper nigrum), Vidanga (Emelia ribes) and Lauha Bhasma. Daruharidra and Lauha bhasma are the main ingredients in this Yoga and hence the name Darvyadi Lauha.

Most of the ingredients of Darvyadi Lauha possess qualities like Tridoshahara, Deepana, Pachana, Hridya, Yakriduttejaka, Krimighna, Shwasahara, Raktavardhaka and Rasayana.

As seen in the Samprapti of Pandu Roga, aggravated Pitta Dosha afflicts Jatharagni, leading to Rasa Dhatu Dushhti. Jatharagni Mandya produces Sama Ahara Rasa and when it sets into circulation, already debilitated Dhatwagni (esp. Raktradhvagni) disturbs Dhatu Poshana Parampama causes Raktalpata leading to Pandu Roga. The Deepana, Pachana property of Darvyadi Lauha corrects Agnimandya and alleviates Ama. Thus, it can break the Dosha-Dushya Sammurchhna of the disease.

Darvyadi Lauha contains Amalaki- a rich source of Vitamin c which helps in absorption of iron. It may increase the bioavailability of Lauha Bhasma and may also decrease the common hazards of oral iron therapy. Moreover, Amalaki is Amla Rasa Pradhana Dravya which may increase Rakta dhatu because in Rakta dhatu, Amla Preeti is seen.

Since, Pandu is a Ruksha Guna Bhuyishtha Vyadhi, Shunthi and Pippali (Snigdha Guna Yukta) present in Darvyadi Lauha may have a significant action on the disease. Darsharidra is Pittahara and Arochakagahna due to its Tikta Rasa. Dravyas like Amalaki, Haritaki and Bibhitaka have properties like Tridoshashamaka, Dhatuvardhaka and Rasayan which may improve Dhatu-shaithilya, Daurbalya and Ojogunakshaya. Pippali and Vidanga are Krimighna, thus they may be useful in Mridhakshunanjanya Pandu. Also, Pippali in itself is Raktavardhaka, Maricha is Srotoshodhaka, so it may check Rasavaha Srotodushit and help in the proper formation of Rakta Dhatu. Most of the drugs are Shwasahara and drugs like Haritaki, Shunthi are hridya also.

Lauha Bhasma due to its Sheeta Virya is Pittashamaka. It is also Balya, Vrishya, Tridoshshara and Rasayana. Moreover, Bhasmas due to their Sukshma Guna increase the absorption and bioavailability of the drug.

Therefore, it is clear that Darvyadi Lauha is likely to check the aetio-pathogenesis of the disease and arrest its progress.

VASADI KASHAYA

Ingredients of Vasadi Kashaya are Vasa, Amrita, Nimba, Kiratikta and Katuka. Vasadi Kashaya possesses qualities like Kaphapittashamaka, Balya, Deepana, Pachana, Krimiaghna, Jwarghna, Shwasahara and Hridya. The Deepana, Pachana Guna is likely to check Agnimandya and alleviate Ama. Thus, it may break Dosh-Dushya Sammurchhna of the disease. All the ingredients are Pittashamaka and of Tikta rasa which is Arochakaghna.

Thus, Vasadi Kashaya with all these properties is likely to check aetiopathogenesis of the disease and arrest its progress.

CONCLUSION

• Pandu is a Varinopalakshita Vyadhi.
• Pandu Roga is a Pitta Pradhana Vyadhi and Pitta is responsible for normal colour of the body.
• Pandu in modern parlance has similarity with Anaemia.
• The commonest type of anaemia is Iron Deficiency Anaemia.
• *Samshodhana* and *Samshamana Chikitsa* in the form of internal and external medicine is the line of management of *Pandu Roja*.
• As *Pandu* is a *Pitta Pradhana Vyadhi*, *Pitta shamaka* treatment should be given, therefore *Darvyadi Lauha* and *VASADI KASHAYA*, fulfills the above criteria.

**REFERENCES**

17. Essentials of Haematology, By Shirish M Kawthalkar, Published by Jaypee Brothers Medical publishers (p) Ltd., New Delhi 2006.