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LITERATURE REVIEW OF PANDU ACCORDING TO ACHARYAS W.S.R. TO ANAEMIA

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ABSTRACT

Pandu Roga is described elaborately by all Acharyas of *Ayurvedas* a specific disease with its own pathogenesis and treatment. *Pandu* is described under *Rasa-Pradoshaja Vikara*. In *Pandu Roga* there is predominance of paleness all over the body due to *Rakta Alpata*. *Pandu Roga* is one among them which occurs due to *Dhatu Vaishamyata*. *Pandu* is described in almost all authentic *Ayurvedic* literatures. As the name denotes the main feature of *Pandu Roga* is *Pandutva*. According to *Charaka*, it is one among the *Rasavaha Srotodushti*. *Susruta* has mentioned it as *Raktavaha Srotodushti*. The clinical condition of *Pandu* in *Ayurveda* can be co-related with Anaemia described in Modern Medical Science, due to the resemblance in the clinical signs and symptoms. In Modern Medicine, *Pandu* is a pale appearance which may be due to the decreased blood supply to the skin or decreased visibility of oxyhemoglobin. Insufficient dietary intake and improper absorption of iron are the causes of Iron Deficiency Anemia which presents with the significant symptoms such as feeling of weakness, tiredness, shortness of breath, palpitations, Koilonychia, Glossitis, Dysphagia and altered sensation of taste.

Keywords: *Pandu*, *Samhita*, Anaemia, *Pandu* Types.

INTRODUCTION

Anemia is a major global public health problem having an influence on health as well as social and economic development affecting both developing and developed countries.¹ Anaemia is the most prevalent nutritional deficiency disorder in the world.² Globally, Anaemia affects 1.62 billion people, which corresponds to 24.8% of the population.³ In India, Anaemia affects an estimated 50% of the population.⁴

Ayurveda is the science of life that is focused on the maintenance of positive health in healthy and eradication of ailments in diseased through its holistic approach, lifestyle practices, dietary habits, and safer medications. In the chapter of *Pandu Roga*, *Acharya Charaka* has described various psychological etiological factors as *Kama* (excessive thinking about sex), *Krodha* (anger), *Chinta* (excessive worrying), *Bhaya* (fear) and *Shoka* (grief).⁵ A detail explanation of *Pandu Roga* is found in almost all *Ayurved Samhitas*. Anemia refers to a state in which the level of hemoglobin in the blood is below the reference range appropriate for age and sex.⁶ blood cells or hemoglobin which, in turn causes pale skin. The changing lifestyle of human being plays a major role in manifestation of various diseases. *Pandu Roga* is also one of them.

Our faulty dietary habits and lifestyle produces *Ama* and further *Agni Dushti* which causes improper *Rasa Dhatu* formation which further hampers the *Rakta Dhatu* formation and leads to *Pandu Roga*.

DEFINITION OF PANDU:⁷

It is called *Pandu Roga* because of the predominance of paleness all over the body.

TYPES OF PANDU ROGA

Acharya Charak described the disease under five categories namely *Vataja*, *Pittaja*, *Kaphaja*, *Sannipataja* and *Mridabhakshanajanya*⁸ and *Acharya Susruta* has accepted only four types of *Pandu* excluding *Mridabhakshanajanya Pandu*⁹, they are:

1. *Vataj Pandu*
2. *Pittaj Pandu*
3. *Kaphaj Pandu*
4. *Sanipataj Pandu*
5. *Mridikabhakshanajaya Pandu*

Acharya Harita mentioned eight types of *Pandu* in *Harita Samhita Kamla*, *Kumbhakamla*, *Halimaka* as their Synonyms.¹⁰

Nidana (Etiology): Knowledge of *Nidana* is of prime importance in the prevention as well as cure of disease. For diagnosis of diseases, one should know the actual reason for manifestation of disease. Here the *Nidana* (causative factors) of *Pandu Roga* is broadly divided in 3 types¹¹

- 1) *Ahara* (Dietary Causes)
- 2) *Vihara* (Habitual Cause)
- 3) *Manasika* (Mental Cause)

PURVARUPA (PREMONITORY SYMPTOMS):

Hridyaspandanam (Palpitation), *Rokshyam* (dryness of the skin), *Swedabhavah* (absence of sweating), *Shramsatatha* (fatigue)

According to *Acharya Sushruta*:¹²

Twakspatnam (cracking of skin), *Shthevan* (salivation), *Gatrasada* (sense of lassitude in the limbs), *Mridbhakshanam* (liking for mud intake), *Prekshankootsothah* (swelling over eye socket), *Vid-Mutra Pitata* (yellow colour of stool-urine), *Avi-paka* (Indigestion) these are mentioned by *Sushruta*.

RUPA (SYMPTOMS): *Acharya Charak* has mentioned the *Samanya* and *Visheshrupa* of *Pandu Roga* in chapter 16 of *Chikitsasthaan* according to the *Dosha* involvement which is mentioned below.

Samanya Rupa:¹³

- Loss of *Indriye Bala*, *Tej*, *Veerya* and *Oja*.
- Loss of *Bala*, *Varna* and *Agni* (power of digestion).
- *Karnashveda* (tinnitus), *Durbalya* (general weakness), *Annadweshya* (aversion towards food), *Shrama* (fatigue), *Bhramanipidita* (giddiness), *Gatrasula* (body ache), *Jwara* (fever), *Shwasa*

(breathlessness), *Gaurva* (heaviness), *Aruchi* (anorexia).

- *Akshikutashoth* (swelling over orbit), *Shirnaloma* (hair fall), *Hataprabha* (body complexion become greenish)

- *Kopana* (dislikes cold things), *Nidralu* (feeling of drowsiness), *Alpawaka* (avoid speaking), *Shtheevan* (spitting frequently)

- *Pindikodweshthana* (calf muscle pain), *Katiuru Paad Ruka* (pain and weakness in the lumbar, thighs and feet), *Arohaneayasa* (patient feels exhausted on climbing)

Vishista Rupa: *Acharya Charak* had classified *Pandu Roga* into 5 types; based on these types *Vishesh Rupas* are described.^{14, 15}

1. *Vataj Pandu*: - *Krishna Panduta* (black and pale-yellow discolouration), *Rukshata* (roughness), *Aruna Angatam* (Reddishness of the body), *Angmarda* (body ache), *Ruja* (pain), *Toda* (Pricking type of pain), *Kampa* (tremor), *Parshvashiroruja* (pain in chest-head), *Varchashosh* (dryness of stool), *Aashyavairasya* (distaste in mouth), *Shopha* (edema over body parts), *Aanah* (constipation), *Bala Kshaya* (weakness).

2. *Pittaja Pandu*: - *Pita-Haritabhata* (complexion become either yellow or green), *Jwara*, *Daha* (burning sensation), *Trishna* (excessive thirst), *Murcha* (fainting), *Pipasa*, *Pitamutrashakruta* (yellowish discolouration of urine and stool), *Sweda* (profuse sweating),

Sheetakamta (increase desire to take cold things), *Katukasayta* (feeling pungent taste in mouth), *Ushnaamlanupashyata* (uneasiness for hot and sour things), *Vidahevidagadhe Anne* (feeling of burning sensation during indigestion of food), *Daurgandhya* (foul smell of body), *Daurbalya* (weakness), *Bhinnvarcha* (diarrhea)

3. *Kaphaja Pandu*:-*Gaurava* (heaviness), *Tandra* (Drowsiness), *Chhardi*, *Shvetavbhasta* (whitish complexion), *Praseka* (excessive salivation), *Lomoharsha* (Horripilation), *Murchha* (Fainting), *Bhrama* (giddiness), *Klama* (mental fatigue), *Sada* (looseness of body parts), *Kasa*, *Shwasa* (dyspnoea), *Alasya* (laziness), *Aruchi* (anorexia), *Vakaswaragraha* (obstruction of speech and voice), *Shukla MutraAkshivarchasa* (whitish discolouration of urine, eye and stool), *KaturukshoshnaKamta* (feeling to take pungent, Hot and dry things), *Shwayathu*, *Madhurasyata* (sweetishness in mouth).

4. *Tridoshaja Pandu*: - Sign and symptoms of all the three vitiated Doshas are present and this is extremely intolerable because of developing complications.

5. *Mridbhakshanajanya Pandu*: - *Bala-Varna-Agni Nash* (loss of strength, complexion and power)

SAMPRAPTI (PATHOGENESIS) ¹⁶

Acharya Charaka has mentioned the *Samprapti* of *Pandu* in *Chikitsasthan*. According to him, due to consumption of *Nidana Pitta* located in the *Hridaya* (*Sadhak Pitta*) gets aggravated and being expelled from *Hridya* by powerful *Vata* and it enters the *Dash-Dhamanya* (attached to the heart) and circulates all over the body. This aggravated *Pitta* reaches the space between skin and muscle tissue and brings vitiation in *Kapha*, *Vata*, *Asrika*, *Twaka* and *Mamsa*. This leading to abnormal types of colourations like *Pandu*, *Haridra* and *Harita* to the skin.

Anemia :-

A condition in which haemoglobin (Hb) concentration and/or red blood cell (RBC) numbers are lower than normal and insufficient to meet an individual's physiological needs.¹⁷ Affects roughly one-third of the world's population.¹⁸ Anemia is associated with increased morbidity and mortality in women and children.¹⁹

Types of Anaemia:-There are several types and classifications of anaemia. The occurrence of anaemia is due to the various red cell defects such as production defect (aplastic anaemia), maturation defect (megaloblastic anaemia), defects in haemoglobin synthesis (iron deficiency anaemia), genetic defects of haemoglobin maturation (thalassaemia) or due to the

synthesis of abnormal hemoglobin (haemoglobinopathies, sickle cell anemia and thalassaemia) and physical loss of red cells (hemolytic anemia).²⁰

1. Iron-Deficiency Anaemia:-

Iron deficiency anemia is a condition in which the body has too little iron in the bloodstream. This form of anemia is more common in adolescents and in women before menopause. Blood loss from heavy periods, internal bleeding from the gastrointestinal tract, or donating too much blood can all contribute to this disease.

Symptoms: -Tiredness, lethargy, feeling faint and becoming breathless easily, headaches, irregular heartbeats (palpitations), altered taste, sore mouth and ringing in the ears (tinnitus).

2. Pernicious Anaemia:-

Pernicious anaemia is the most common cause of Vitamin B12 deficiency.

Symptoms:-Psychological problems like depression, confusion, difficulty with memory or even dementia and Nervous problems like numbness, pins and needles, vision changes and unsteadiness.

3. Hemolytic anemia: Hemolytic anemia is a condition in which red blood cells are destroyed and removed from blood stream before their normal life span is up.

Symptoms:- the most common symptom of anemia is fatigue. A low red blood cell count can also cause shortness of breath,

dizziness, headache, coldness in your hands or feet, pale skin, gums and nail beds, as well as chest pain. Symptoms of hemolytic anemia include Jaundice, Pain in the upper abdomen, Leg ulcers.

Sickle cell Anaemia: - Anaemia in which the body makes sickle-shaped ("C"-shaped) red blood cells is called Sickle Cell anaemia. It contains abnormal haemoglobin which causes sickle shape and can't move easily through the blood vessels.

Symptoms:-Fatigue, Shortness of breath, Dizziness, Headache, Coldness in the hands and feet, Pale skin, Chest pain.

Thalassaemia: - Thalassaemia is an inherited blood disorder which causes the body to make fewer healthy red blood cells and less haemoglobin. The two major types of thalassaemia are alpha and beta thalassaemia.

Symptoms of thalassaemia are caused by a lack of oxygen in the blood stream. They may also have other health problems including slowed growth and delayed puberty, bone problems and an enlarged spleen.

Aplastic Anaemia :- Aplastic anaemia is a blood disorder in which the body's bone marrow doesn't make enough new blood cells. This may result in a number of health problems including arrhythmias, an enlarged heart, heart failure, infections and

bleeding. Damage to the bone marrow's stem cells causes aplastic anaemia

Clinical features of the three doshika types of panduRoga and their modern view :-

Table no. 01

<i>Vatikapandu</i> features	<i>Paittikapandu</i> features	<i>Kaphajapandu</i>
<i>Krishna pandutva</i> – Blackishness in skin	<i>Sah Peeto</i> - Yellowish discoloration of skin	<i>Shweta avabhasat am-</i> Whitishness in the body
<i>Ruksha Angatam</i> – Ununctous body	<i>Haritabho varna-</i> greenish discoloration	<i>Shukla siraavana dham -</i> Visible whitish veins
<i>ArunaAngatam</i> – reddish discoloration	<i>Peeta siraavanadham</i> – Visible yellowish veins	<i>Shukla nakha</i> – whitish nails
<i>Krishna siraavana dham</i> – Visible Blackish Veins	<i>Peeta nakha</i> – yellowish nails	<i>Shukla anana</i> – whitishness in the face

<i>ArunaSirtva</i> - Visible Reddish veins	<i>Peeta anana</i> – yellowishness in the face	<i>Shukla Netra</i> – whitishness in the eyes
<i>Krishna nakha</i> – Blackish nails	<i>Peeta Netra</i> – yellowishness in the eyes	<i>Shukla mutra-</i> whitishness in the urine
<i>Arunanakha</i> – Reddish nails	<i>Peeta mutra</i> – colored urine – Yellowish	<i>Shukla varchastvam</i> – Whitishness in stools
<i>Krishna anana</i> – Blackishness in the face	<i>Peeta shakrit</i> – Yellowish colored stool	<i>Madhur aasyatvam</i> – Sweet taste in the mouth.
<i>Arunanetrata</i> – Reddishness in the eyes	<i>DaurgandhyamVarcha</i> – Foul smelling stools	<i>Aruchi</i> – Anorexia
<i>Krishna akshadam</i> – blackishness in the	<i>BhinaVarchastvam</i> - loose stools	<i>Gaurav</i> – Heaviness

eyes		
<i>Krishna mutra</i> – Blackish urine	<i>Katukaaasyo</i> – pungent taste in mouth	<i>Praseka</i> – Excess salivation
<i>Krishna mala</i> – blackish stool	<i>Anna anabhinandan</i> – Does not relish food.	<i>Alasya</i> – Laziness
<i>Varcha shosha</i> – Dryness of stools	<i>Amlodgaraeructa tions</i> – sour	<i>Chardi</i> – Vomitting
<i>AasyaVairasya</i> – Distaste in the mouth	<i>Vidagdheannech asyajayte</i> - Improper digestion of food	<i>Tandra</i> – Drowsiness
<i>Anaha</i> – abdominal distension	<i>UdgaroVidahashcha</i> - eructation associated with burning sensation	<i>Loma harsha</i> – Horripilation
<i>Angamar da</i> – Pain in the body	<i>Daha</i> –Burning sensation	<i>Klama</i> – Mental fatigue
<i>Ruja</i> – Pain / ache	<i>Jvara</i> – having increased body temp.	<i>Murcha</i> -fainting
<i>Toda</i> – Pricking pain	<i>Trishna</i> – Excessive thirst	<i>Saada</i> – Prostration
<i>Kampa</i> –	<i>MurchaPipasart</i>	<i>Vakswara</i>

Tremor	<i>ah</i> – Faints due to excessive thirst / coma	<i>graham</i> Inability to speak–
<i>Shiro ruja</i> –	<i>Swedanah</i> – sweating	<i>Kasa</i> – Cough
Headache	Profuse	
<i>Bala kshaya</i> – weakness	<i>Daurbalyam</i> – Weakness	<i>Shwasa</i> – Dyspnoea
<i>Parshvar uja</i> - Pain in the sides of chest	<i>Tamah</i> – Feeling of darkness in front of eyes	<i>Shwayathum</i> – Oedema

DISCUSSION:

Although *Chinta*, *Bhaya* and *Shoka* are described as etiological factors in the causation of *Pandu Roga* in *Ayurveda*, but no detail about the exact mechanism of action and the pathological process has been made there. However, at certain places, some specific hints are obtained which clarify and elaborate the whole understanding about the topic.

Excessive worry or stress (*Chintyaanam cha Atichintanaat*) has been described as the specific etiological factor for the vitiation of *Rasa Vaha Srotas*.

CONCLUSION

The above stated studies and the discussion reveals that the scientific explanation to the etiopathogenesis of

Chinta, Shoka and Bhaya in the causation of *Pandu Roga*, i.e., to say that these factors cause iron deficiency anemia by causing a significant reduction of serum and bone marrow iron while also inhibiting the process of erythropoiesis. This study also reveals the involvement of inflammatory mediators. Thus, the above study throws some light on the possible pathogenesis of *Pandu Roga* and confirms the *Ayurveda* Samprapti. However, still more studies are required to throw light on the other attributes of the pathogenesis of *Pandu Roga*.

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