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## UNDERSTANDING OF MALAROOPITTA AND BILE

<sup>1</sup>Dr. Akshaykumar\*, <sup>2</sup>Dr.Kekuda Prashanth, <sup>3</sup>Dr. Kulkarni Pratibha,  
<sup>4</sup>Dr Mishra BiharinNiladri

<sup>1,4</sup>P.G. Scholar, Department of Shareera Kriya, Sri Dharmasthala Manjunatheshwara College of Ayurveda & Hospital, Hassan-573201, Karnataka, INDIA

<sup>2</sup>Professor, Department of Shareera Kriya, Sri Dharmasthala Manjunatheshwara College of Ayurveda & Hospital, Hassan-573201, Karnataka, INDIA

<sup>3</sup>Professor & Head, Department of Shareera Kriya, Sri Dharmasthala Manjunatheshwara College of Ayurveda & Hospital, Hassan-573201, Karnataka, INDIA

### Abstract

"Malarooopi Pitta" is the entity which is byproduct of *Rakta Dhatu* and is meant to be excreted out. The *Bhautik* predominance in *Rakta* is *Agni* and *Jala*. *Rakta* is also said to be *Panchabhautika*, its *Gunas* are listed out with respect to *Bhutas*. It is endowed with *Gunas* like *Snigdha* (unctuous), *Laghu* (light) etc. *Rakta* is *Ashrayi* (which takes shelter) to *Pitta* it possesses all other *Gunas* of its *Ashraya* (which gives shelter), the *Pitta*. During the *Poshana* of *Rakta Dhatu* the *Raktadhatwagni* will act on *Asthayee Rasa Dhatu* in *Rakta Vaha Srotus* and produces the *Sthayee Rakta Dhatu*, *Upadhatus* and *Malarooopi Pitta* and excreted out of the body. Bile is the basic substance which is having major role in digestion and metabolism, and gives the colour to the stool. Bile is secreted from the liver & possesses similar functions to that of *Pitta*. Bilirubin is the component of the bile which is formed by the decomposition of the mature RBC's. In the intestine due to the action of Bacteria Bilirubin is converted in to Urobilinogen & Stercobilin, both are excreted through urine and feces respectively. *Kamala* is the pathological condition caused by vitiation of *Pitta* and *Rakta Dhatu* and produces yellowish discoloration of the skin, stool and urine. Hyperbilirubinemia is the condition caused by either excessive destruction of the RBC or obstruction to the flow of bile presented by symptoms like yellowish discoloration, icterus, etc. Hence we can consider that *Malarooopi Pitta* and Bile are identical in their functions.

**Keywords:** Bile, Malarooopi Pitta, Pachaka Pitta, Rakta Dhatu, Yakrut.

### Corresponding Author:

**Dr. Akshaykumar**

P.G.Scholar, Department of Kriya Shareera,

Sri Dharmasthala Manjunatheshwara College of Ayurveda & Hospital,

Hassan-573201, Karnataka, INDIA

E-mail: akshaykumar5800@gmail.com

Phone: +91-9591144727



## INTRODUCTION

The body is made up of *Dosha-Dhatu-Mala*, all of these are essential for body but functions in different ways. *Doshas* are the functional matters, *Dhatus* are supportive structure and *Malas* are the excretory material in generally, it is told that there are three *Mala* (*Purisha, Mutra, Sweda*) but metabolically there are various other *Malas*. One such metabolic excretory product of our body is *Pitta*, which is followed during metabolism of *Rakta Dhatu*. Though all the metabolic wastes are formed at the level of *Dhatus*. They are also excreted but physically, so *Pitta* also gets excreted out and we call it as *Achapitta* or *Malarooopi Pitta*. In this paper a conceptual review about *Malarooopi Pitta* and its possible counterpart has been analyzed.

## AIMS AND OBJECTIVES

- To understand the formation and functioning of *Malarooopi Pitta*.
- To understand the possible counterpart of *Malarooopi Pitta* in modern science.

## MATERIALS & METHODS

“*Malarooopi Pitta*” is the entity which is byproduct of *Rakta Dhatu* and is meant to be excreted out. The *Bhautik* predominance in *Rakta* is *Agni* and *Jala*. *Rakta* is also said to be *Panchabhautika* and the *Gunas* are listed out with respect to its *Bhutas*. It is endowed with *Gunas* like *Snigdha* (unctuous), *Laghu* (light), *Drava* (liquid) etc. *Rakta* is *Ashrayi* (which takes shelter) to *Pitta*. it possesses all other *Gunas* of its *Ashraya* (which gives shelter), the *Pitta* [1].

## THE ROLE OF DOSHA-DHATU-MALA ON BODY

The three basic pillars of body are –*Dosha, Dhatu* and *Mala*, in which *Doshas* are 3 in number they are *Vata, Pitta* and *Kapha*. These biological elements are originated from the *Panchamahabhutas*. They are generally referred to as *Tridosha*.

Further *Panchamahabhutas* lead to the formation of seven *Dhatus* along with *Doshas*, they are *Rasa, Rakta, Mamsa, Meda, Asthi, Majja* and *Shukra*. The major functions of these *Dhatus* are *Prinan, Jeevan, Lapan, Snehan, Dharan, Puran* and *Garbhotapadan* respectively. According to Ayurveda, except *Rasa Dhatu*, each *Dhatu* is formed from its preceding *Dhatu*. Each *Dhatu* has its metabolism and waste products - *Malas*. The *Malas* are catabolic aspects of the body namely, *Purisha, Mutra* and *Sweda*.

If the person is said to be healthy, then body should perform all the functions in the physiological limits. That is all three *Doshas* (*Vata, Pitta* and *Kapha*) should be in well balanced condition, The *Agni* should work normally. The *Dhatus* should be in the normal proportions. The *Malas*

should be properly excreted out of the systems. The soul, the mind and the organs are satisfactorily acting their parts for mutual pleasure and happiness, Hence, the well-being of the body depends on the equilibrium of *Dosha*, *Agni*, *Dhatu*, *Mala*, soul and mind.

*Dosha* means which does the *Dushsna* of the body, means *Doshas* are controller of the body when they are in normalcy and in the same time they destroys the body when they are vitiated. So *Doshas* control all the body functions and *Dhatu*s acts as supporters. In case of *Malas* they also support body when they are eliminated timely if not even they can produce disease.

### UTPATTI OF MALAS

Food gets divided in to two parts that is *Prasadabhaga* and *Kittabhaga*. *Prasadabhaga* gives rise to *Rasa* and *Kittabhaga* gives rise to *Malas*, From *Kitta* following entities are nourished, *Sweda*, *Mutra*, *Purisha*, *Vata*, *Pitta*, *Sleshma* etc.

**Number of Malas:** *Malas* which are formed during the process of digestion are called as *Annamala* while *Malas* which are formed in the metabolism of *Dhatu*s are called as *Dhatu Mala*. The *Malas* (Waste product) in body are as follows – waste products of food are *Mutra* (Urine) and *Purisha* (Faeces), while waste products (by products) of *Rasa Dhatu* is *Kapha*, *Rakta Dhatu* is *Pitta*, *Mamsa Dhatu* is *Kha-Mala*, *Medha Dhatu* is *Sweda* (Sweat), *Asthi Dhatu* are *Kesha* and *Loma* (Hair), while *Sneha* of eye, Skin and Faeces are the waste product of *Majja Dhatu* [2].

### WHY MALAROOPIPITTA IS CONSIDERED AS PITTA

According to Ayurveda *Pitta* is a *Mala* that is a waste product and it is meant to be excreted out of the body. It is originated from *Rakta*. This statement is based on the *Pitta* is the *Mala* of *Rakta*. Further it is explained that *Pitta* is *Vikruthi* or byproduct of *Rakta Dhatu*, both (*Rakta* and *Pitta*) are because of its intimate coexistence with and the capacity to vitiate the *Rakta*. *Pitta* and *Rakta* possesses identical colour and smell. In addition, the *Moola Sthana* of these two factors are the *Yakruta* (Liver) and *Pleeha* (Spleen).

*Malarooopi Pitta* considered as *Pitta* because it gives colour to the *Malas* (Faeces and Urine). This can be supported by description of *Shakhasrita Kaamala* (Obstructive Jaundice), the non-excretion of *Pitta* enters in to *Kosta* which is responsible for the *Swetha Varcha* (Whiteness of *Purisha*). In the context of *Pitta*, *Varna Prasadana* is one of the *Krama* of *Pitta* so we can justify that *Malarooopi Pitta* is responsible for the *Varna* of *Malas* [3].

### WHERE AND HOW IT IS FORMED

In the initial stage, *Jataragni* acted upon the *Aahara* and produces *Annarasa* and *Kitta*. This *Annarasa* undergoes into *Paaka* by *Rasa Dhatwagni* in the *Rasavahasrotas* leads to the formation

of *Rasa Dhatu* and its *Mala*. After this process the *Rakta Dhatwagni* acts on *Rakta Sadharmiya Amsha* of *Rasa Dhatu* in the *Rakta-vahasrotas* which produces *Saara* and *Kitta Baga*. From *Kitta Baga Pitta* is produced. This *Pitta* is nothing but *Malarooopi Pitta*.

### WHERE IT IS EXCRETED

*Malarooopi Pitta* is formed during the *Avastha Paaka*, in which the ingested food is passes through different stages of *Paaka Kriya* and reaches to *Amla Avastha Paaka* where *Acha Pitta* is produced. In the *Dalhana* commentary it is cleared that *Acha Pitta* is nothing but *Malarooopi Pitta*, this *Acha Pitta* is secreted in to the *Grahani* [4].

### BILE

“*Bile*” is an emulsifying agent produced in the liver and secreted into the duodenum. Bile is a fluid that is made and released by the liver and stored in the gallbladder. It is a dark green to yellowish brown fluid, produced by the liver, that aids the digestion of lipids & and stored and concentrated in the Gallbladder. Bile is the basic substance which is having major role in digestion and metabolism, and gives the colour to the stool [5].

### THE COMPOSITION OF BILE

The composition of bile is 97% water, 0.7% bile salts, 0.2% bilirubin, 0.51% fats (cholesterol, fatty acids and lecithin) and 200 meq/l inorganic salts (GB). Bile contains mostly cholesterol, bile acids (also called bile salts), and bilirubin (a breakdown product of red blood cells [6].

### FUNCTIONS OF BILE

Bile increases the absorption of fat, it is an important part of the absorption of the fat-soluble substances, such as the vitamins A, D, E, and K. Besides its digestive function, bile serves also as the route of excretion for bilirubin, a byproduct of red blood cells [7].

### EXCRETION OF BILE

Senile RBC's are destroyed in reticuloendothelial system and hemoglobin is released from them. Then Hemoglobin is broken into globin and heme, where heme is split into iron and the pigment biliverdin and iron goes to iron pool and is reused. First formed pigment biliverdin is reduced to bilirubin, this bilirubin is released into blood from the reticuloendothelial cells, in blood, the bilirubin is transported by the plasma protein, albumin. Bilirubin circulating in the blood is called free bilirubin or unconjugated bilirubin, within few hours after entering the circulation, the free bilirubin is taken up by the liver cells. In the liver, it is conjugated with glucuronic acid to form conjugated bilirubin. This conjugated bilirubin is then excreted into intestine through bile [8].

## PITTA & RAKTA (BLOOD)

According to *Charaka Samhita*, and *Astanga Hrudaya*, *Pitta* is *Rakta Mala* because *Sayonitwat, Samanyad Gandha Varnayo, Plihanam Cha Yakrutachaiva Tad Adistayavartate*, that is *Pitta* has intimate coexistence with *Rakta* and has capacity to vitiate *Rakta*, these two substances possess identical colour & smell, in addition the seats of *Rakta* and *Pitta* are *Yakrita & Pliha*. There is a relationship between RBC's and some important constituents of the bile that is Pigment. RBC's are destroyed in Spleen and Hemoglobin is released & is broken down into.

- Iron 2. Globin 3.Porphyrin

This Porphyrin is converted in to bilirubin and excreted with bile. Part of bilirubin is converted in to Stercobilinogen and which gives dark colour to stools, later the Stercobilinogen is reabsorbed and is utilized in the production of new hemoglobin, and the pigment of bile is Bilirubin & Biliverdin are the constituents of the hemoglobin complex [9]. From these two points of view it may be stated that *Rakta* is the seat of *Pitta* and two bile pigments are also the waste product of *Rakta*.

*Pittavrudhi Lakshana: Peeta Vin Mutra Netra Twak*, loss of appetite, thirst, feeling of burning sensation in the body, loss of sleep. These features are explained by modern pathology is due to circulation in excess of the pigment bilirubin. Same thing is explained by *Chakrapani* data to *Malaranjaka Pitta* or *Pitta* which imparts colour to the stools that is in *Shakashrita Kamala* – non excretion of *Pitta (Malaranjaka)* in to the *Kosta* leads to the *Sweta Varchas*. In modern science in case of obstructive jaundice where bile is not excreted in the intestine leading to the clay colored stools. *Kamala* is the pathological condition caused by vitiation of *Pitta* and *Rakta Dhatu* and produces yellowish discoloration of the skin, stool and urine. Hyperbilirubinemia is the condition caused by either excessive destruction of the RBC or obstruction to the flow of bile presented by symptoms like yellowish discoloration, icterus, etc. Hence we can consider that *Malaroopi Pitta* and Bile are identical in their functions [10].

## DISCUSSION

*Malaroopi Pitta* is formed during metabolism of *Rakta Dhatu*. This *Pitta* is not the *Pitta Dosha*, but it is the byproduct of *Rakta Dhatu Paaka*. It is called *Pitta* because the substrate (*Rakta Dhatu*) is related to *Pitta* in many ways. The *Rakta Dhatu Paaka* occurs in *Yakruta* and *Pleeha* (Because *Sthana* of *Rakta Pitta* is *Yakruta* and *Pleeha*) Hence, *Mala* of *Rakta Dhatu* must also be formed in *Yakruta* and then it should get excreted in some of the other form. This *Mala* will get

*Udirana* (Secretion) in to *Kosta* during *Amla Avastha Paaka* and when its quantity is abnormally more or if it is vitiated, it may be vomited out, but it is not seen in its normal activity. This *Malarooopi Pitta* resembles *Pitta Dosha* in many Physical aspects that is both are *Drava*, *Amla Katu Rasa*, *Ushana*, etc. It also has *Dharana* function in the form of aiding *Amla Avastha Paaka* and after that function is done, it gets excreted out through *Purisha* without coming to persons Knowledge. The evidence of *Malarooopi Pitta* and its functions can only be experienced or explained with the clinical condition of *Shakashrita Kaamala*.

- The Bilirubin and bile both together have many striking similarity with *Malarooopi Pitta*.
- Bilirubin formed as a byproduct of disintegration of RBC or Haemoglobin, conjugated in liver and excreted through bile.
- Bilirubin is an excretory product, bile as such contains many things including Bile salts etc., many of which are excretory in nature.
- Bile enters duodenum once food reaches duodenum and helps in digestion (Usually the time during which bile enters GIT is after an hour of food, which can be taken as second stage of digestion), especially Fat digestion.
- The by product of Hb, gets excreted out, many other excretory products are also excreted out including bile salts.
- If Bilirubin does not get excreted because of any pathology before or in or after liver, it may lead to jaundice, which is characterized by the yellowish discoloration.
- All the above mentioned points suggest the bile can be considered as *Malarooopi Pitta*.

## CONCLUSION

- *Malarooopi Pitta* is basically formed as by product of *Rakta Dhatu Paaka* and it is *Mala* of *Rakta*
- It is excreted into *Kosta* in the form of *Achapitta* during *Amla Avasthapaka*, helps digestion and itself getting excreted out.
- *Malarooopi Pitta* can be compared to bile and its constituents, especially bilirubin which is the waste product derived from disintegration of RBC.

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