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CONCEPT OF RANJAK PITTA AND ITS ROLE IN LIVER AND SPLEEN

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ABSTRACT

The body is made up of three fundamental elements: *Vata, Pitta*and *Kapha*;which stay unchanged from birth to death. Pitta*Dosha*plays a crucial role in digestion and metabolism. *RanjakaPitta*is one of the five subtypes of *Pitta*that contribute to *RanjanaKarma*. The seven stages of *Raktotpatti*(Erythropoiesis) and the colour transition. Acharya*Sharangadhara*explained the stories from*Shweta*to *Aalaktaka*in detail.The functions of *RanjakaPitta* can be related to the functions of intrinsic factor secreted by the gastric glands which is responsible for the absorption of vitamin B12 . The absorbed vitamin B12 is needed for the syntheisis of hemoglobin, which imparts red color to blood. Vitamin B12 have crucial role in erythropoiesis. Erythroblasts require vitamin B12 for proliferation during their differentiation. *Yakrit* and *Pleeha* is considered as the *Sthana* of *RanjakaPitta*.

KEYWORDS:

Ranjaka Pitta, *Shareera*, *Kriya*, intrinsic factor.

INTRODUCTION

Originating in cosmic consciousness, this wisdom was intuitively received in the hearts of the ancient scholars. They perceived that consciousness was energy manifested into the five basic principles or elements. Man is microcosm of the nature and so the five basic elements present in all matter also exists within each individual. Thus out of the womb of the five elements, all matter is born. The five basic elements exist in all matter. Water provides the classic example: - the solids of iced water are manifestation of the *Prithvi Mahabhuta* (earth principle). Latent heat in the ice (*Agni*) liquefies it, manifesting into *JalaMahabhuta* (water principle). And then eventually it turns into steam expressing the *Vayu Mahabhuta* (air principle) the steam disappears into *Akasha* or space. *Bhuta* is that which is not born out of something, but out of which something is born. *Vata*, *Pitta*and *Kapha*are directly responsible for*Vyadhi*and *Swasthya*, which govern the body'sproduction, preservation and destruction[1]. The *Tridosha*support the*Sharira*, similar to how pillars support a home. They are located in the lowest, middleand top parts of the body. The second *Dosha*triad,*Pitta*, depicts the agents responsible for alterations in biological systems.*PittaDosha*regulates digestion, metabolism, maturity and equilibrium.There are five types of *Pitta* namely *Pachaka*, *Ranjaka*, *Sadhaka*, *Alochaka*, *Brajaka*. The *Visesha Sthana* of *Ranjaka Pitta* is said to be *Amashaya*. The other opinion is *Yakrit* and *Pleeha*. The main function of *Ranjaka Pitta* is said to be *Rasaranjana* i.e imparting color to *Rasa Dhatu* and aids in the formation of *Rakta Dhatu*[3]. Brief Physio- anatomical understanding of the Gastrointestinal tract with reference to chemical and physical digestion is necessary to understand physiology of *Ranjaka Pitta.*

SITES OF *RANJAKA PITTA*[4]

Acharya Sushruta- Yakrutha and *Pleeha*

Acharya Vagbhatta- Amashya

Acharya Sharangdhara- Yakrutha

Acharya Bhavprakash- Yakrutha and *Pleeha*

CO-RELATION WITH LIVER AND SPLEEN

The site of *Ranjak pitta* is *Yakrit*(Liver), *Pliha*(Spleen), *Amashaya*(Stomach) which is well proved by our *Ayurveda* masters. In modern literature it is mentioned that blood is formed in liver and spleen during intrauterine life. Hepatic stem cells in fetal liver migrate to bone marrow and become the major site for production of blood after birth. Liver is store house for Vitamin B12, Folic acid and iron. It is needed for the maturation of erythrocyte. The red pulp of the spleen is a special reservoir that contains large quantities of concentrated red blood cells. In liver and spleen diseases like hepatomegaly and splenomegaly there is reduction of hemoglobin concentration which denotes that there is importance of liver and spleen for the formation of blood. It is also seen that when liver and spleen are in normal condition still there is reduction in hemoglobin. It is due to the absence of intrinsic factor which is secreted from parietal cells of stomach (*Amashaya*) and is required for the absorption of vitamin B12. In ancient literature it is also mentioned that when there excessive blood loss, one should drink blood with honey or he should eat goat's fresh liver with its contained bile. So these three structures *Yakrit*(liver), *Pleeha*(spleen), and *Amashaya*(stomach) help in maturation of erythrocyte and proliferation of erythroblastic cells which supports our *Ancient Acharya*[5].

In modern science it is described after 20 years of age blood formation occurs in red bone marrow of vertebrae, sternum, ilea, ribs and proximal portion of humerus and tibia. The actual site of *Rakta Dhatu*formation (erythropoiesis) is not specified. *Acharya Sushruta* has classified

bones as *Sthula Asthi*and other then *Sthoolasthi*. *Acharya DALHAN*has commented *Alpa Asthi*for bones other then *Sthoolasthi*. Bone marrow is found especiallyin *Sthulasthi*in significant quantity[6]. As per *ArthapattiTantrayukti*we can say that some less amount of other type of *Majja*may be present and this other type of marrow may be red bone marrow. In some large bones like humerus and tibiae red bone marrow is present in the proximal portion. *Acharya Sushrut* has explained red bone marrow is present in the proximal portion. *Acharya Sushrut* has explained red bone marrow is present in *Alpasthi*(bones like vertebrae, sternum, ribs, ilea). *Rakta Sadharmi Ansa* is present in *Aahar*which is required for the nutrition of *Rakta Dhatu*. Food content which is required to nourish and proliferation the pluripotent stem cells may be called as *Rakta Sadharmi ansa*[7].

RANJAKA PITTA AND RAKTAGNI

Aahar rasa is final absorbed product of food digested by *Jatharagni*. From *Aahar rasa* subsequent *dhatus* are formed and nourished by three laws[8]. Commentator provides three laws for the formation and nourishment of *Dhatus*. Those are *Kshiradadhi Nyaya, Khalekapota Nyaya, Kedarikulya Nyaya*. Three laws work together simultaneously for the replenishment of *dhatus*. *Kshiradadhi Nyaya*work for the formation of *Dhaatu*where as *KedarikulyaNyaya*and *KhalekapotaNyaya*work for the nourishment of *Dhaatu*. *Jatharagni* act upon *aahar* and is converted into *Aahar rasa* and *mala*[9]. In *Kshiradadhi nyaya Acharya Charaka* has mentioned *Rasagni*act upon *RasaDhatu*and is converted into *RaktaDhatu* whereas in *Sushrut Samhita Raktagni* act upon *Anu Rakta* which is formed from *rasa dhatu* by the action of *Rasagni*and help in the formation of *Rakta Dhatu*. In *Kedarikulya Nyaya*and *KhalekapotaNyaya Rakta Sadharmi Ansa*(nutrient specificto *Dhatu*) of *AahraRas*(nutrient product) nourishes the formed *Dhatus*. Blood should be regarded as pure when its color resembles red-gold, *Indragopa*(scarlet fly), red lotus, *Mahavar,* and *Gunja*fruit (abrus precatorius)[11]. The function of *Raktagni*is to synthesize the colorless Rakta Dhaatufrom *anu* part of *rasa Dhaatu*.

Again *Acharya Charak* has mentioned that the *Teja*portion of *Rasa*is mixed with *Ushma*of *Pitta*(*Ranjak Pitta*) that is helpful for the coloration of *Rakta Dhatu*[12]. *Acharya Dalhana* in the commentary of *Sushrut Samhita* has mentioned *TejarupaRanjak Pitta*is mixed with *Avyapanna Vikar Rahit Rasa*(diseased free *Rasa Dhatu*) to form *Rakta Dhatu*[13]. *Acharya Sushrut*has named all subtype of *Pitta*by the name of *Agni*. *Acharya Sushruta*has mentioned the location of *Ranjaka Pitta*as *Yakrita*(liver) and *Pliha*(spleen). It helps in the formation of *Rakta Dhatu*.*Vagbhatta* has mentioned its location as *Amashaya*(stomach).According to all these views *rasa dhatu* is contributed in the formation of *Rakta Dhatu*with the help of *Ranjaka Pitta*. The function of *Ranjaka Pitta* is to color the *Rasa Dhatu*to form *Rakta Dhatu*. So, both *Ranjaka Pitta*and *Raktagni*has an important role in the formation of *Rakta Dhatu*.

DISCUSSION

Basically *Vata, Pitta, Kapha* constitute three regulatory systems i.e. nervous, endocrine and immune system respectively of all living system. Among five types of *pitta, Ranjaka pitta* has an important role for the coloration of *Rakta Dhatu*. *Raktagni* (one type of *Dhatavagni*) helps in formation of *Rakta Dhatu*. *Raktagni* acts on *Anu Rakta* (pluripotent stem cells) and convert it into *Rakta Dhatu* (blood cells). *Ranjak Pitta* during the process of hemopoiesis provides coloration (hemoglobin) to *RaktaDhatu*.*Ranjaka Pitta*concentrated its activities on the areasof*Amasaya,Yakrit*and*Pleeha*.*Raktagn i*produces cellular componentsdifferent than those that cause blood to be red. This involves the creation of white blood cells, platelets, etc. All of them do notcontribute to "*Ragatvam*" in*Raktha*. They have different functions.*Raktha Dhathu*is referred to as "*Jeevana*" due to its crucial purpose. This function

isassigned only to RBCs and Hb.WBCs have both protective and defensive functions, whereas platelets only have clotting mechanisms. It is more closely connected toBalaand*Vyadikshamatva*.The *Ranjaka Pitta*function is a transformational concept that promotes haemoglobin synthesis, erythropoiesis, andiron metabolism. Contemporary science supports the *Sthanas* of*Ranjaka Pitta*, including *Amashaya, Yakrit,* and Pleeha.

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REFERENCES

1. Acharya JT. Charaka Samhita with Ayurveda Dipika commentary of Chakrapani Datta. Reprint ed. Varanasi (India): Chaukambha Orientalia; 2007. p. 325.
2. Acharya JT. Charaka Samhita with Ayurveda Dipika commentary of Chakrapani Datta. Reprint ed. Varanasi (India): Chaukambha Orientalia; 2007. p. 325.
3. Moharana P, Rawat N, Roushan R. *International Journal of basic and applied research*, 2018; **8(9)**:897-903.
4. Sushrut. Garbhavyakarana shareera. In: Shastri AD, editors. Susruta Samhita. Revised edition. Varanasi (India): Chaukhamba Sanskrit Sansthan; 2016. p. 36-54.
5. Chakrapani. Grahani Chikitsa adhyaya. In: Gaur BL, editors. Ayurveda deepika on Charak Samhita. 1st ed. New Delhi (India): Rastriya ayurveda vidyapeeth; 2014. p. 796-875.
6. Paradakara HSS, editor, 9th ed. Ashtanga Hrudaya with Sarvangasundara commentary of Arunadatta and Ayurvedarasayana commentary of Hemadri. sootrasthana; dosadivignaniyam adhyayam:chapter 11,verse 4-18. Varanasi (India): Chaukambha Orientalia; 2005;192.
7. Sushrut, Vranaprashna Adhyaya. In: Shastri AD, editors. Susruta Samhita. Revised edition. Varanasi (India): Chaukhamba Sanskrit Sansthan; 2016. p. 112-122
8. Hall JE, Guyton AC. Blood and its constituents. In: Kurpad A, editors. Textbook of medical physiology. 2nd ed. New Delhi (India): Elseveir; 2018. p. 109-167.
9. Chakrapani. Grahani Chikitsa adhyaya. In: Gaur BL, editors. Ayurveda deepika on Charak Samhita. 1st ed. New Delhi (India): Rastriya ayurveda vidyapeeth; 2014. p. 796-875.
10. Sushrut, Garbhavyakarana shareera. In: Shastri AD, editors. Susruta Samhita. Revised edition. Varanasi (India): Chaukhamba Sanskrit Sansthan; 2016. p. 36-54.
11. Paradakara HSS, editor, 9th ed. Ashtanga Hrudaya with Sarvangasundara commentary of Arunadatta and Ayurvedarasayana commentary of Hemadri. sootrasthana; dosadivignaniyam adhyayam:chapter 11,verse 1-3. Varanasi (India): Chaukambha Orientalia; 2005;192.
12. Acharya JT, editor, Reprint ed. Charaka Samhita with Ayurveda Dipika commentary of Chakrapani Datta, sootrasthana; kuddaka chatuspadam adyayam: chapter 9, verse 4. Varanasi (India): Chaukambha Prakashan, 2007; 62.
13. Charak, Vidhisonita adhyaya. In: Pandey K, Chaturvedi G,editors. Charaka Samhita. Revised edition. Varanasi (India): Chaukambha Bharati Academy; 2015. p. 442-456