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AARTAVA'S FORMATION FROM RASADHATU AND THE PHYSIOLOGICAL ASPECTS OF UPDHATU

Dr. Apra Mishra

Associate Professor, Department of Kriya Sharir, SCPM Ayurvedic Medical College, Gonda - U.P.

Email Id - Apram3970@mail.com

ABSTRACT

Based on research and astute observations, Ayurveda is a science of healing. Ayurveda places emphasis on treating patients' illnesses and preserving the health of a normal human being. Any science's ability to succeed rests on its core ideas. As a result of evolution, humans have become a highly specialized species. For the existence of body, two elementary factors are there, one that form structural configuration and second which control physiological aspects. Ayurveda has explained the physiological functions of human body under three elements viz. Dosha, Dhātu and Mala. Updhatus are important physiological units and are derived from Dhatus and resemble Dhatus in terms of structure, function and nature. Updhatus are sub tissues or secondary tissues in the body which serve as important components and have certain fixed functions to render. Dhatus are closely associated with the Updhatus. Updhatus are derived from the first four Dhatus. Updhatus are finest product of Dhātu metabolism. Dhātavagni plays major role in metabolism of Dhatus and Updhatus. Updhātu is subsidiary tissue arises from Dhatus. They are important physiological units and engaged to design the structural composition of the body. Dhātu form the basic structure of the body, they are not able to execute the functions of body without the support of Upadhatus. Upadhātu act as a bridge between these fundamental entities. Upadhatus are also involved in emergence of diseases and the knowledge is necessary to understand the pathological conditions. Stanya (breast milk) and aartava (menstrual flow) being the Updhatus of Rasa Dhātu; their quality, quantity excellence depends on metabolic and functional status of Rasa Dhātu.

INTRODUCTION

In the same way as a tree's roots are crucial to its upkeep, stability, and growth, the human body depends heavily on Dosha, Dhatu, and Mala. There are seven Dhatu which is derived from Ahara Rasa that is Rasa, Rakta, Mamsa, Meda, Asthi, Majja and Shukra. Dhatus and organs get developed in the embryological stage (Garbha) and after birth these Dhatus gradually grow. For growth and development Dhatu needs nourishment. These Dhatus are nourished by Ahara Rasa. Formation of New Dhatu Ahara Repair Damaged Dhatu Every elements in this universe is composed of Panchmahabhuta i.e., Akash, Vaayu, Agni, Jala, Prithvi. Ahara is the main factor for formation of Rasa. Ahara is also made of Panchmahabhuta, having six tastes (Madhur, Amla, Lavana, Katu, Tikta and Kashaya) possess many properties when indigested undergoes digestion. After being digested properly, Ahara with the help of Koshagni present in stomach (Gastric juice- Hydrochloric acid) and small intestine arise its vital essence known as Ahara Rasa. They are nourished from Sara portion produced in digestion of nutrient fluid in Dhatusrotas. It means they are produced directly from Ahararasa. It is needed for Ahararasa to undergo more digestion for giving rise to Dhatu as well as Updhatu. All the seven Dhatus of the body contains their own fire (Agni) in order to metabolize the nutrients (micro as well as macro) supplied through Srotas (channels of circulation). Substances that are present in the body which only perform Dharana Karma is Updhatu. Meaning of Up is Sub, sub ordinate, subsidiary, secondary and Dhatu means tissue. Updhatu is subsidiary tissue which provides base to the body but they do not nurture it like Dhatu. Updhatu helps to sustain body. The main difference between Dhatu and Updhatu is that any changes or vitiation in Dhatu results in the effect in Uttar Dhatu but this can't happen in case of Updhatu. Each of seven Dhatu nourishes and supports Updhatu which is subsidiary tissue or secondary tissue product and produce Malas (waste products). The Updhatu neither nourish each other nor any other tissue for the matter. In Ayurveda classics formation of Aartava (Menstrual blood) is from Rasa Dhatu and the Rakta named Raja is formed which get accumulated in uterus and comes out for three days every month. All Anulomana activities of reproductive system are under the control of ApanaVata including monthly cyclic flow of Aartava. Duration of the bleeding time (Raja Strava Kala) is three, five and seven days by different Acharyas.

Vyutpatti

The word 'Upadhatu' consists of two parts with Prefix "Upa" and the word "Dhatu". The literary meaning of "Upa" is towards, near to, by the side of, resemblance, nearness, with the

idea of subordination and inferiority. The word 'Dhatu' is derived from the root "Dha" which means to support and nourish. Everything existing is supported by this or because they bear and support, they are termed as Dhatu. Which supports the growth of the body is termed as Dhatu. Dhatus are stable constituents, the basic elements of the body, which make the body exist.

Nirukti

Shows close resemblance towards Dhatu. Those, which are derivatives of Dhatus, produced at complementary, subsidiary level, are known as Upadhatus.

Definition

Upadhatus are bodily parts that are derived from Dhatus and do not undergo any additional metamorphosis.

MATERIAL AND METHODS

Formation of Upadhatu

Every component of the body is fed into the dhatu metabolism. All elements, including upadhatus, receive their nourishment from this pool. Upadhatus rely on their nourishing ingredient for sustenance. Food after digestion takes two forms viz. the Prasadaja part (essence) and the Kitta part. Depending upon their nourishment from Prasadaja or the Kitta, the tissue elements of the body are described of two types, the pure one "Prasadakhya" and waste product "Malakya". From Prasadaja portion all the Dhatus are formed in progressive order. Upadhatu are also nourished from this Prasadaja part. Ahara Rasa when goes to the abode of one Dhatu after the action of that particular Srotasagni it is transformed into two parts Prasadaja and Kitta. Prasadaja portion is further divided into two parts. The main portion of it provides nourishment to that Dhatu and the subtle portion (Suksma Bhaga) is meant to provide nourishment to two elements, by its further division. The major portion of it goes to the site of next Dhatu and the subtle of it provides nourishment to the Upadhatu. Third waste portion nourishes the Mala of the respective Dhatu. In this way from the Prasadaja part of Ahara Rasa Upadhatus derive their nourishment in progressive order. When Ahara Rasa comes to the abodes of Rasa Dhatu, by the action of Rasadhatvagni it get transformed into two parts, the Prasadaja portion and the Mala portion. The Prasadaja part again gets divided into two parts. Sthula Bhaga and Suksma Bhaga. Sthula portion of it supplies nourishment to the Rasa Dhatu and Suksma portion of it again divided into parts. The major portion of it goes to the abodes of Rakta Dhatu and subtle part provides

nourishment to Stanya and Raja. In the same manner the subsequent Upadhatus are derived from their respective Dhatus. The process of Dhatu metabolism goes on continuously like the passage of time (Kalavat Anavasthitatva). If all the Dhatvagnis, Vayu and Srotases are unimpeded they play a pivot role in continuation of Dhatu metabolism. These components are closely related with Upadhatus too.

No. of Upadhatus According to Different Acharyas.

Acharyas	Name of Upadhatus	NO.
Sharangdhar, Bhavmishra, Trimalla Bhatt	Stanya, Raja, Vasa, Sweda, Danta, Kesha, Oja	07
Vridhdha Vagbhatt, Dalhana.	Stanya, Raja, Kandara, Sira, Vasa, Twak, Snayu, Sandhi.	08
Charaka Samhita, Gayadass, Chakrapani	Stanya, Raja, Kandar, Sira, Vasa, Twak, Snayu.	07
Bhoj	Stanya, Raja, Vasa, Sweda, Danta, Kesha, Oja. Stanya, Raja, Sira, Twak, Snayu	05

Stanyam

"Stanya" means "breastmilk." As a result, it is the upadhatu associated with reproduction that is exclusive to females. Rasa dhatu is the source of its food. serves the purpose of giving the baby nourishment.

Rajas

Rajas or Raja means the menstrual blood. This one is also the female specific upadhatu and appears in a particular reproductive age group in females. Performs the important function of providing seat and nourishment for embryo in initial period.

Kandara

Commentator Charkrapani has defined Kandara as the 'Sthula Snayu' or 'Sthula Sira'. These are upadhatu of Rakta dhatu and assist in the function of locomotion.

Sira

Upadhatus of Rakta dhatu. Sira refers to the vascular structures in the body that perform the function of transport, circulation, transmission of bodily elements. The root term 'Sru' from which the word 'Sira' is derived indicates flow.

Vasa

Mansa dhatu's upadhatu is 'Vasa'. The term 'Vasa' is coined on the basis of its function of covering the body or wrapping the body, abdomen etc. It refers to the fat that fills up various muscle spaces, covers vital organs and supports or protects other structures like vessels and organs.

Twak

Twak is the Samskrit term for Skin. It is the outermost covering layer of the body. It protects the entire structure of Shariram and thus plays important role as the barrier between external and internal environment. It is the upadhatu of Mansa dhatu. It is believed to be composed of 6 layers.

Snayu

Upadhatu of Meda dhatu. These are the body constituents which bind any 2 body structures at their joint. Such joints are called as Sandhi in Ayurveda. Thus, they perform the function of holding the entire structure together. Classics have described Nine hundred Snayus.

Sandhi

Sandhi refers to joint between any 2 or more structures in the body. Commentator Dalhana of Sushruta Samhita has described Sandhis as Upadhatus of Meda dhatu.

Updhatus and their Disease

Upadhatu	Disease
Rajah, Stanya	Concern with female physiology
Kandara, Sira, Snayu, Sandhi	Distinctly related with vatavyadhi & involved in chronic stages of other diseases.
Sira	Conveyance of doshas to the place of “kha- vaigunya” thus involved in pathogenesis of many diseases.
Vasa	Distinctly involved in prameha, one of the dusya of prameha.
Twak	Many underlying pathological conditions manifest on skin

Dosha and updhatu

Dosha	Updhatu
Vata	Kandara, Sira, Snayu, Sandhi, Twak
Pitta	Rajah, Twak
Kapha	Stanya, Vasa

Aartava (raja)

Only females possess Raja. Reproduction, a particular function linked to female physiology, is used to generate this. Because they get their food from the Prasadaja section of Dhatus, this is known as Upadhatu. This is present in liquid state. Raja is the menstrual blood. Menstruation is intimately correlated with the normal functional states of the female and it is an index of her well being. As in developing and aged plants flower and fruits do not come up, as in bud and decaying flowers or fruits the fragrance is not explicit, similarly in females Raja (menstrual blood). The Raja or aartava is produced from the Rasa only in women and is manifested for 3 days once every month. Raja is produced after 12 years of age and ceases to appear (menopause after 50 years).

Rasa gets matured and processed over a period of one month and at the end of the month, the rasa gets converted into shukra (semen) in men and artava (menstrual blood, ovum) in women. Rasa majorly nourishes Rakta dhatu and in quick time too, whereas the same rasa nourishes the raja or aartava in small proportions and in slow time. Therefore it takes one long month for the aartava to get properly nurtured and get manifested during monthly periods, while rakta dhatu is regularly produced.

Raja & Panchamahabhuta

The subtle forms of male and female reproductive elements also exhibit the principles of Panchamahabhuta, which aid in the production of the material parts by molecular adjustments that increase their bulk and provide sustenance. In female, raja the purest part of rasa-dhatu plays a very important role along with artava. However, this relationship of raja and artava is not mentioned properly anywhere in Ayurvedic Samhitas. Being the purest part of rasa dhatu, it contains all the nutrients, which assists the growth of embryo by the osmo-regulation method. The following characteristics of Aap mahabhuta as stated in Ayurveda are also found in raja.

1. **Rasa**:-With the help of rasa, the effect of the dravyas can be left to a certain extent, e.g., drugs having sweet taste lead to the growth of all tissues and increase the functional capacity. Since raja helps the growth and development of fetus, it is having the sweet taste.
2. **Sarvadravasamuha**:-Basically it exists in liquid state, that is, water balance in the body, moisture, all types of secretions, hormones etc. In the same way raja is also found in liquid state.
3. **Guruta**:-Every liquid substance has its own weight. Similarly, raja must have its own weight.
4. **Shaitya**:-Like Aap mahabhuta, shaitya is also one of the major features of raja as proved above.
5. **Sneh**:-Property of rasa-dhatu is mentioned as Snigdha. Raja being its upadhatu its property may also be regarded as Snigdha.
6. **Ret**:-In general this 'Ret' means semen or Shukra dhatu in male. It is not considered in female. But as raja is considered as stree shukra it gets discharged from the body in rajakala with this discussion we conclude that though rajah is composed of the Panchamahabhuta, the property of Aap mahabhuta is found more in it. So, it can be argued that the property of raja is Soumya and it should be regarded as Stree-shukra. Here we have to keep in mind that the body temperature of a woman is increased at the time of ovulation (Agne Yam Aratvam) but at this juncture, raja retains its sheeta guna which is composed of Panchamahabhuta with the dominance of Aap mahabhuta.

Raja and Tridoshas

The flow of menstruation happens every 28 to 30 days. However, a woman's uterus typically bleeds every 28 days, with the exception of pregnancy and occasionally nursing. This cyclical uterine bleeding is called rajodarshan. While the period from the beginning of one menstruation to that of the next is called the menstrual cycle. From the onset of menstruation, the first period of 3 to 5 days is called Rajodarshan or Rajapravruti. It is also called as Rajakal. After rajakal, the period of 12 to 16 days is called Rutukal and thereafter the period up to menstruations is known as Rutuvyatitakal. In this way the cycle completes within 28 days.

Rutukala and Tridosha

The uterus is cleansed to create a fresh raja following monthly flow. This period is referred to as the proliferative stage in contemporary science. Here in this stage, Kapha dosha does

the work of accumulation in the body. Therefore, it is responsible for the creation of new raja. During this period, Kapha dosha remains very active in its function. So, it should be considered as 'Kaphaprakop Kala' whereas at this stage Vata dosha remains passive, after having performed its function in rajakal. The pitta dosha is in the accumulative state, as it has to perform its function during the rajovyatit kala. If fertilization occurs during this period the pitta-dosha helps the fertilized ovum to grow. If the process of fertilization does not occur, pitta-dosha goes on increasing and at its extreme stage with its ushna guna liquefies the layers of raja and consequently raja is thrown out along with blood. Ovulation takes place in this rutukala. The period of forming the ovulation is the same as mentioned in the modern science, that is, 14 ± 2 . With this discussion, we can conclude that kapha is in its dominant position, pitta is in its accumulative stage and the vata is in passive stage during the rutukala.

Rutuvyatitakala and Tridosha

Rutuvyatitakala commences soon after the rutukala is over. During this stage pitta becomes dominant whereas Kapha is found in its passive stage, as it has no function to perform. Pitta becomes forceful to help the growth of the fertilized ovum if at all fertilization takes place. If it does not, it destroys the layers formed by kapha dosha with the help of ushna, sara and drava guna. Vata is in its growing stage because it has to perform its function in rajakala. Therefore, we can say that pitta is in active stage, vata is in growing state, and kapha is in passive state.

Rajakala and Tridosha

Raja has nothing to do, therefore it turns into a waste product. For this reason, vata must take great action to get rid of the waste product. However, it is seen that while kapha continues to expand, pitta becomes dormant. The entire process is referred to as tridoshas in Ayurveda.

Raja and Tridosha's Niyatakal

Niyatakal is one of the ideas in Ayurveda. Adhya, Madhya, and Antya are the primary divisions based on age, day, night, and diet phases. During the aforementioned phases, kapha, pitta, and vata are highly prevalent. As we have seen, menstrual cycle also has its own divisions, namely, rutukala, rutuvyatita-kala and rajakala. It is taken for granted that rutukala signifies the Adhya (beginning) in which kapha is dominant. The rutuvyatita kala is known as Madhya (middle), where pitta is active, whereas the rajakala is Antya (end) where vata seems to be forceful. As mentioned earlier, in rutukala there is a formation of new raja because of the dominance of Kapha guna. If a woman having Kapha prakruti takes food intake containing

the excessive ingredients of kapha guna, the rutukala is deferred. It is observed that there is a close connection between rutukala and excessive kapha. During rutukala the production of ovum takes place. It is followed by the inception of the rutuvyatita kala. During this period temperature of female body increases to some extent. Hence this period should be regarded as pitta dominated period. If kapha in rutukala, pitta in rutuvyatita kala and vata in rajakala continue to grow excessively, the basic principle regarding nyat kala gets distorted, consequently raja is vitiated. Therefore, the doshas have to be made inactive in later states, which help to maintain the balance of doshas. In this regard Chakrapani pertinently remarks that the doshas grow sometimes excessively as per physical needs. Their growth should not be regarded as a diseased state. This process is in keeping with the natural law. Here the term 'excessive' growth should be taken in a limited sense.

DISCUSSIONS

Despite being referred to as secondary or sub-tissues, the upadhatus serve vital bodily activities. It would be impossible to conceive many significant functions without upadhatus. Vasa aids in lubricating and twak in enveloping the body, protection, and beautification; sandhis aid in our movements and locomotion; siras aid in circulation; kandaras and snayus aid in supporting the body and holding the tissues together; stanya aids in lactation; and aartava aids in regular cleansing, health maintenance, and reproduction in women. Imbalances in upadhatus in the form of pathological increase (vridhhi) and or decrease (kshaya) will lead to many diseases and deformities. Therefore it is important to know in detail about upadhatus, their location, types, number and functions. Updhatus are the byproducts of the Dhatu metabolism but they cannot be considered as the Malas because Updhatus are nourished by the prasada part of the Dhatu. Raja and Stanya is Streevishishta Updhatu. Raja is a substance of the body which flows out at a specific time or period that is monthly menstrual flow. The "Raja" is the secretion from the genital tract of female body throughout their reproductive life. Normal and proper Rajapravritti is one of the indications of Swasthavastha. It is one of the most essential factors for the healthy progeny. In high tech era, Woman have successfully taken leap from kitchen to the corporate world, but at the same time added their health risk due to that they forget all about reproductive cycle or biological clock, changing life style, eating habit, over mental and physical stress, Improper sleep ultimately all these disturbs body physiology influence proper nourishment of the body, causing wide range of medical ailments especially regarding female reproductive health. Among them menstrual disorder is very common problem.

CONCLUSIONS

The goals of Ayurveda have been to cure sick people and preserve the health of healthy people. Dosha, Dhatu, and Mala, the fundamental components of the body, preserve our body's homogenous state (Samya), which is crucial for Arogya. Among these Dhatus is nothing but the pillars of the body on which whole body grown up above. Updhatu is derivative of Dhatu. The Dhatu nourishes the Updhatu, if Dhatu is in excellent state then its Updhatu production and nourishment will also be in excellent state. Raja (menstrual flow) being the Updhatus of Rasa Dhatu; its quality, quantity excellence depends on metabolic and functional status of Rasa Dhatu. Upadhatus are important components (structures) of our body serving important functions. The description of upadhatus by Ayurveda teachers of ancient time explains the dexterity, analytical vision and the perfection with which the anatomy was understood, taught and documented in spite of having lesser amenities for doing it. The different Acharayas at different periods of time enlightened the concept of Updhatu in their own ways. Upadhatus do not nourish any successive. Updhatus are basically nourished from the Sukshma Prasadaj part of the Dhatu, which also nourishes the subsequent Dhatu. Dhatvaagni and Strotas play an important role in the nourishment of Dhatu and updhatus. Every updhatu possesses a unique dhatvaagni. The status of each individual Dhatu determines how the Updhatu should be fed. Raja is a Stree Sharira-only functional entity. One of the most important aspects of female reproductive health is proper Rajapravritti.

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