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PHYSIOLOGY OF DHATU AND DHATU NIRMANA: AN AYURVEDA REVIEW

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ABSTRACT

The health status of individual merely depends upon the state of equilibrium of Saptadhatu and Tridosha. These all humor nourished by the process of Jatharagni through the metabolic activity of nourishment. The Ahara Rasa passed into each level of Dhatu for the nourishment purpose. Similar to Doshas the Dhatus are vital entity of body which directly support physiological and anatomical activities of body. The nourishment of all Dhatus depends upon the Dhatvagni. Rasa, Mamsa, Meda, Rakta, Asthi, Shukra and Majja Dhatus are main Dhatus of human body. The modern science described these Dhatus as Plasma and lymph, Blood tissue, Muscle tissue, Adipose tissue, Bone tissue, Bone marrow and reproductive fluids. The formation of these Dhatus needs to be understands to explore their physiology in body. Considering this present article summarizes physiology of Dhatu and Dhatu nirmana.

KEYWORDS: Ayurveda, Physiology, Dhatu, Kriya Sharir.

INTRODUCTION

Ayurveda mentioned theories of *Dhatus* which are physiological entity of body, the equilibrium of healthy physical and mental state depends upon the healthy state of *Dhatus*. The imbalance state of *Dhatus* may result pathological conditions in body. Ayurveda described various types of *Dhatus* which are as follows:

- ✓ *Rasa Dhatu*
- ✓ *Rakta Dhatu*
- ✓ *Mamsa Dhatu*
- ✓ *Meda Dhatu*
- ✓ *Asthi Dhatu*
- ✓ *Majja Dhatu*
- ✓ *Shukra Dhatus*

Chetana dhatu denoting *Atma*, *Beejarupa dhatu* denoting sperm, *Beejarupa dhatu* containing the essence of other *Dhatus*, *Pradhana dhatu* denoting *Shukra*, *Dravarupa dhatu* denoting *Pitta* and *Apdhatu* denoting watery elements in body, etc.[1-4]

Rasadhatvagni helps greatly in the formation of *Rakta Dhatu* which formed from the essence of *Ahara*, effects of *Raktadhatvagni* helps in the nourishment of *Mamsa Dhatu*. The *Dhatvagni* nourish and support each *Dhatu* in every step. The metabolic wastes which are formed during these all steps are known as *Dhatumala*. *Avarana* and *Dushti* in *Srotas* may affect the process of *Dhatus Nirmana*.[4-7] The major steps involved in the nourishment and formation process of *Dhatus* is depicted in **Figure 1**.

Figure 1: Nourishment/formation considerations of *Dhatus*

Nirmana* and Physiology of *Dhatus

Ayurveda described theories of *Ksheera Dadhi Nyaya*, *Kedara Kulya Nyaya*, *Khale Kapota Nyaya* and *Ek Kala Dhatu Pushti Nyaya* regarding the formation of tissues or other biological elements. *Dhatvagni* divide into *Sukshma*, *Sthula* and *Mala Bhaga* during the process of nourishment from the *Rasa* to *Shukra Dhatu*. The major function of *Dhatvagni* is to support the formation of respective *Dhatus* and *Upadhatus*. *Dhatvagni* provides necessary materials to subsequent tissues in order to boost process of tissue formation and repair.

The nutrient fluid (*Ahara-rasa*) obtained from the transformed food during metabolic process helps to forms *Dhatus*. The *Ahara-rasa* nourishes body components; first nourishes *Rasa dhatu* then *Rakta* and finally *Mamsa Dhatu*. The nutrients of food nourish *Dhatus* qualitatively as well as quantitatively.[6-8]

The process of metabolism witnessed a pathway in which *Dhatus* transformed into two parts; *Poshya* and *Poshaka*. The *Poshya* nourishes itself and *Poshaka* helps to nourishes others. The *Poshya* part support nourishment of *Dhatu's* while *Poshaka* parts nourishes other *Dhatus*. The metabolic transformation of *Dhatus* involves formation of *Upadhatu* and *Mala* which are described as by-products and waste products respectively.

Physiology of *Dhatvagni*

- *Raktadhatwagni* is associated with the process of iron metabolism, protein metabolism and hemopoeisis, etc.
- *Asadhatwagni* is associated with portal vein circulation, formation of WBC and glucose metabolism, etc.
- *Medodhatwagni* involves in lipid metabolism.
- *Mamsadhatwagni* is associated with protein metabolism.
- *Majjadhatwagni* is associated with iron metabolism, hemopoietic and protein metabolism.
- *Asthidhatwagni* controls thyroid & parathyroid, it also regulates calcium metabolism.

Physiology of *Dhatus*

The major functions of *Dhatus* are as follows:

- ✓ *Preenana*: Nourishment
- ✓ *Jeevana*: Vitalizing
- ✓ *Snehana*: Moistening
- ✓ *Dharana*: Supporting
- ✓ *Garbhoptpadana*: Reproduction

Rasa Dhatu

- It possesses *Drava* and *Snigdha* qualities.
- Physiologically involves in the process of *Tushti*, nourishment and nourishes blood.

Rakta dhatu

- ➢ It offers *Drava*, *Visra* and *Sara* properties
- ➢ Physiologically responsible for *Jeevana*, *Varnaprasadana* and *Mamsapushti*.

Mamsa dhatu

- ➢ It possesses *Sthira*, *Snigdha* and *Pichila* properties.
- ➢ It nourishes body (*Dehapushti*) and nourishing adipose tissue.

Meda dhatu

- ➢ It possesses *Snigdha*, *Shlakshna* and *Mrudu* properties.
- ➢ It involves in the function of *Snehana*, provides firmness and nourishes bones.

Asthi dhatu

- ➢ It possesses *Sthira*, *Kathina* and *Guru Gunas*.
- ➢ Physiologically involves in the function of *Dharana* (holds body frame) and *Majjapushti*.

Majja dhatu

- ➢ It is associated with the properties of *Sandra*, *Snigdha* and *Drava*.
- ➢ Perform functions of *Snehana*, *Balakara*, *Asthipoorana* and *Shukrapushti.*

Shukra dhatu

- ➢ It offers *Drava*, *Snigdha* and *Sheeta* properties
- ➢ *Shukra dhatu* involves in the functions of reproduction, this also associated with *Harsha* and *Bala*.[8-11]

CONCLUSION

Doshas the *Dhatus* are vital entity of body which directly support physiological and anatomical activities of body. *Rasa*, *Mamsa*, *Meda*, *Rakta*, *Asthi*, *Shukra* and *Majja Dhatus* are main *Dhatus* of human body. The nourishment of all *Dhatus* depends upon the *Dhatvagni*. The modern science described these *Dhatus* as Plasma and lymph, Blood tissue, Muscle tissue, Adipose tissue, Bone tissue, Bone marrow and reproductive fluids. The process of metabolism involves transformation of *Dhatus* into; *Poshya* and *Poshaka*. The *Poshya* nourishes itself and *Poshaka* helps to nourishes others. The *Poshya* part support nourishment of *Dhatu's* while *Poshaka* parts nourishes other *Dhatus*. Physiologically *Dhatus* are responsible for *Preenana*, *Jeevana*, *Dharana*, *Garbhoptpadana* and *Snehana*, etc.

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