



DHATUPOSHANA- A CONCEPTUAL REVIEW

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ABSTRACT

Nyaya or maxims or aphorisms are in the form of common occurrence that can be used to explain complex biological activities easily made understood by beginners of the science. These are used commonly to explain difficult to comprehend subjects in *Ayurveda*. *Ayurveda* stands on concrete *Siddhantas*- tried tested and validated principles over time. At times the principles become so complex that multiple dynamic processes occurring at a same time require special thought processes to understand the physiology and pathology. The scholars have made use of *Nyaya* in these circumstances to make things simple to understand without deviating from the founding pillars. Growth and development of *Dhatu*s is one such topic that begs attention as the physiological and pathological correlates along with adaptation of treatment principles becomes tough task. This article is an attempt to understand and to explore the rationale behind these maxims with special reference to the physiology of *Dhatuposhana*.

KEYWORDS *Nyaya, Dhatu, Dhatuposhana.*

INTRODUCTION

Physiology of the body as per *Ayurveda* revolves around *Dosha, Dhatu* and *Mala*. As the root is *moola* during *Sambhava, Sthithi* and *Pralaya* for the tree, in the same way *Dosha, Dhatu* and *Mala* are the *Moola* for *Shareera*.^[1] Though it is difficult to understand the physiology of body by means of these basic things, these are indeed very important to be understood to proceed towards understanding pathology. Among these three, *Dhatu* sustains and nourishes the body. *Dosha, Dhatu, Mala* these *samawayikarana* (inseparable causes for existence) of the *Shareera*. The cloth which is made with threads and pot is made with mud, in the same way the *Shareera* is made with three basic components.^[2] The *vrudhi* and *kshaya* of the plant is based on its root if any disturbances takes place in the root level then it going to produce the impact on the whole plant, in the same way if any disturbances in these three components then it leads to produce different types of diseases.

The word *Dhatu* is derived from root *Dhru* which means *dharana* (to support) and *poshana* (to nourish).^[3] Hence the constituent of the body which supports *Shareera, Manas* and *Prana* is *Dhatu*. For proper nourishment of *Dhatu*, the *aahara rasa* should be *paramukshma*-having minute destructed particles of *mahabhutas, saarabhuta*-having finest properties of *mahabhuta*,

tejabhuta-means completely digested. To ensure proper nourishment to the tissues the food consumed should be digested to minutest form and to possess the properties of *Mahabhutas*. All the *Ayurvedic* scholars have universally accepted that the *Dhatu*s are nourished one after another from *Rasa* to *Shukra* and *Aahara* *rasa* is source for the nourishment of all the *Dhatu*s.^[4]

Are under tremendous misconceptions among the students of *Ayurveda* as there are varied opinions and understandings of the same by various scholars and there is no unanimous opinion. This article tries to identify the logic behind postulations and tries to give an acceptable answer to the protagonist.

AIMS AND OBJECTIVES

1. To review the maxims (*nyaya*) described regarding *Dhatuposhana* in the classics of *Ayurveda*
2. To interpret the said postulations in the light of Modern Physiology for a comprehensive understanding of the concepts

Nyaya

Nyayas are used to explain complex knowledge principles when the matter becomes complex beyond the tangible capacity of the student. *Nyayas* are essential for the scholars for the better understanding of the concepts

of *Ayurveda*. The entire process of *Dhatu Poshana*, or nourishment, operates through the three basic *Nyayas*, or biotransport mechanisms:

1. *Ksiradadhi Nyaya* (assimilation and biotransformation).
2. *Kedarikulya Nyaya* (microcirculation and tissue perfusion),
3. *KhaleKapota Nyaya* (selective uptake of nutrients by corresponding cells and tissues)
4. *Ekakala Dhatuposhana Nyaya* (Arunadatta)

***Ksheera-dadhi-nyaya / SarvatmaParinamaPaksha*(The law of Transformation)**

As milk is curdled to prepare curd and further processed to yield dairy products like butter, ghee etc, the preceding *Dhatu*s get transformed into the succeeding *Dhatu*s. Like milk changes to curd, *ahara rasa* changes in sequence of nutrition of *Dhatu*s. At first *Ahara* *rasa* completely changes to *Rasa Dhatu* under the influence of *Agni*, following this is the changing of *Rasa Dhatu* to *Rakta Dhatu* and so on. This is one of the ways of nutrition of different *Dhatu*s.^[5,6]

Dhatu Utpatthikala:

It takes **six days and six nights** for formation of *shukra Dhatu* from *Rasa Dhatu*.^[7] The *rasa Dhatu* which transports nutrients (of *sthayi Dhatu*) stays in each one of the six *Dhatu*s for the space of *3015kala*. It therefore takes for the *rasa* **one month** to be formed into *shukra*. The total time taken for the conversion of *rasa* into the seven *Dhatu*s, in this view is *18090 kala*.^[8]

Time duration for the completion of *Dhatu* formation varies, because it is chiefly dependent on *Agni*.^[9]

1. The completion of the entire process of transformation of the nutrient into the successive *Dhatu*s takes place in a day and night i.e. **24 hours**. If individual's *agni* is *tikshna*.
2. It takes **six days** for the formation of *shukra Dhatu* from the time *rasa* is formed from the food ingested. If individual's *agni* is *Madhyama*.
3. It takes **thirty days** for the formation of *shukra Dhatu* from the time of the formation of the *rasa Dhatu*, If individual's has *Mandagni*

Some *Acharya* oppose this *Nyaaya* stating that, if the transformation of one *Dhatu* to another *Dhatu* takes just similar to the transformation of *Ksheera* into *Dadhi* and so on. Then the transformation is of complete type which implies that the *Uttara Dhatu* is formed only after the complete transformation of the *Poorva Dhatu* and the *Poorva Dhatu* no more exists. If a person goes for fasting for 1 month then the body would become *Shukramaya* and no other *Dhatu* exists.^[10]

Acharya Dalhana clears this aspect by saying that, transformation is never a complete one, it is just a precursor of the *Uttara Dhatu* that is formed from the *Poorva Dhatu*.^[11] The root of *Dhatuposhana* is *Rasa*. This *Rasa* of course is not the first *Dhatu*, instead it is the

essence of the food what we take i.e. *Poshaka*. From this *Ahararasa*, According to this theory, every *Dhatu* has specific *agni (dhatvagni)*, this *agni* cooks the *posaka rasa* (nutrient materials) supplied by the circulating *rasa*.^[12]

He says that, *Parinama* of any *Dhatu* takes place in three forms

- *Sthulabhaga*- which is more in quantity meant for the maintenance and growth of the same *Dhatu*.
- *Suksmabhaga*- which is little in quantity meant for the genesis of the next *Dhatu* and so passes on the next *Dhatu*.
- *Mala bhaga*- which is meant for genesis of waste product of that tissue.^[13]

For example: After the *Agnipaka* of *Poshaka rasa*, *Rasa Dhatu* is formed as *sthoolabhaga* and *Anubhaga* of *rakita Dhatu* is formed along with *Kapha* as *mala*. This *Anubhaga* (minor part) itself can be termed as a precursor. This process of bio transformation depends on *Jatharagni* and *Dhatwagni*. The primary process of digestion is governed by *Jatharagni* until *poshaka rasa* is formed. The formation of *dhatu* is governed by *Dhatwagni* which in principle is proportionate to the integrity of *Jatharagni*.^[14] In *Kramaparinama* of *Dhatu* not the complete transformation.^[15] but a ratio of *dhatu* is formed and utilized for execution of its functions and the remaining portion will serve as precursor for the next *dhatu* in line along with byproducts to be excreted called as *mala*. . And there is a slight modification when it comes to the *Shukra Dhatu*, where the formation of *Mala* is not seen, as *Shukra Dhatu* is in utmost pure form, and *sookshmabhaga* is the *Ojas*.^[16] In this way, the *Parinama* of *Dhatu* takes place by giving the precursor for a succeeding *Dhatu* by the help of *Dhatvagni*.

***Kedari-Kulya- Nyaya/Amshaamashaparinamapaksha*(The law of transmission)**

As a single channel and its branches connects the paddy fields and supplies water to all fields in a sequence, similarly this maxim explains different *Dhatu*s of the body get nutrition one by one in sequence through vessels. The first *Rasa Dhatu* gets nutrition from *Ahara Rasa*. Then *Rakta Dhatu* get nutrition from the rest part of *Ahara Rasa* and likewise till the end i.e. *Shukra Dhatu*. In this way, the nourishment is taken to all the *Dhatu*s by *Ahararasa* and each *Dhatu* can pick-up its own nutrients. From the nutrient fluid *Rasa* is formed later *rakta, mamsa, medas* and so on.^[17]

***Khale Kapota Nyaya / pruthakprinamapaksha* (The law of selectivity):**

The pigeons select the grain of their choice from the vast expanse of the fields similarly; the nourishment of *Dhatu*s takes place by selection. The nourishing fluid travels to different *Dhatu*s through different channels. In the beginning, the nearby *Dhatu* draws its nutrient

fraction from the nourishing fluid and the distant ones get nourished at later stages. Thus, the nourishment of tissues takes place through different channels. This is on the analogy of the pigeons carrying grains from a field and flying out in different directions.^[18]

Every *Dhatu* get nourishment directly from *ahararasa* so this *nyaya* is also called as *Pruthakparinampaksha*. It means the selection of individual items of requirement by the individual *dhatvagnis* from the same pool of *Aahara rasa*. From *Rasa* to *Shukra* the time for nourishment increases, that time depends upon two factors one is length of *srotas* & other one is thickness of *srotas*. Just as the *Kapotas* coming from different directions and distances for heap of paddy & fly away to their own places of dwelling either early or late depending upon their distance & directions they require to travel.^[19]

Ekakaala Dhatuposhana

The *ahara rasa* percolates into all *Dhatuvahasrotas* at a time uniformly, it can be presumed that *Dhatu*s are nourished simultaneously. Charaka states that *Vyana vayu* takes the *rasa* to distribute all over the body swiftly without any interruption, throughout the life.^[20] ensuring proper *dhatuposhana* at real time.^[21]

Discussion and Application of nyayas

Kshira- Dadhi Nyaya: To know the sequential transformation of *Dhatu*s this *Nyaya* is helpful. Leptin of Adipose tissue is inducing the osteocyte production is almost similar to the concept of transformation from one *Dhatu* to another. The process of formation of osteoblast from adipose tissue through Leptin is nothing but transformation.^[22] Apart from this, a research done on bone marrow stem cells show that, Spermatogonial cells are also formed from the bone marrow stem cells. Which once again gives the hint of *kramaparinama*.^[23]

In *Chikitsa*, *Anuloma* & *Pratiloma Kshaya* if the *Purva Dhatu* becomes *Vruddha* it results in succeeding *Dhatuvruddhi*, likewise if the previous *Dhatu* becomes *Kshina* it shows *kshinata* in succeeding ones. It's called *Anuloma gati* & opposite to this is *Pratilomagati*.^[24] especially seen in diseases like *Rajyakshma*. In *Rajyakshma*, the cause; *vishamashana* leads to *anulomakshaya* of *dhatu*s from *rasa* to *shukra*. If *rajyakshma* is due to *ativyavaya*, the *shukrakshaya* causes *snehagunakshaya* and *dhatukshaya* occurs from *shukra* to *rasa* in the reverse way. This *nyaya* is helpful in the treatment of diseases occurred due to *Anuloma* & *Pratiloma Vruddhi* & *Kshaya*.

Kedari-kulya Nyaya: Vagbhatacharya describes that *Garbhaposhana* is done by *Kedarikulya Nyaya*, means mother and foetus are connected with the *Garbha Nabhi Nadi*, whatever the *aharaghatika* consumed by the mother that is converted into the similar *Poshakamsha* in *Garbha* & it does the *Garbhanga – pratyangavruddhi*.^[25]

Sushruta used this *Nyaya* while explaining about *Sira* (vessels), like the *Kedar* & *Kulya* the *siras* which spread all over body does the nourishment of body. Recent studies reveal that a pregnant woman loses 4% of her brain volume to meet the energetic demands of her baby's brain (the loss is regained in about six months).^[26] which supports the theory of *KedariKulya*.

Eka kiala Dhatuposhana: Assimilation processes performed by seven kinds of *dhatwagni* in their respective *Dhatu*s. After enzymatic action, digestive end product is formed and reaches into circulation through lymphatic and blood circulatory system. Thereafter end products of complex food, reach to the cells by either energy dependent or energy nondependent process. In ancient science, *ahara rasa* containing *vilakshana guna yukta panchbhoutika dravyas* which are rendered fit for metabolism into *Dhatu*, goes into circulation and reach to *Dhatu*s at a time.^[27]

Khalekapota Nyaya: Each *Dhatu* of body takes that particular *dravya* among *vilakshanagunayuktadravyas* which can nourish and develop to that particular *Dhatu*. The received quantity of *dravyas* by *Dhatu*s, are directly proportional to the need and demand of the body. In which *Dhatu*, there is rich quantity of those *mahabhutas*, that *Dhatu* receives to those *mahabhouta* rich *dravya*. For illustration; *Rakta Dhatu* is rich with *agnimahabhuta*, so this *Dhatu* will take *agnimahabhutapradhandravya* and so on.^[28]

Here, there is mix-up of two basic principle of Ayurveda i.e. first is *Ekkal Dhatuposhannyaya* and second is *khalekapotanyaya*. The equilibrium between anabolic & catabolism of *Dhatu*s is controlled by *dhatwagni*. The commentator Chakrapani has explained that *rasadidhatu*s constantly undergo destruction, which is replaced by *panchbhautika* nutrients. He also states that the *Dhatu*s are made well by anabolic process & lost due to catabolic events i.e. *sharira-Dhatu*s which are destroyed by their own *agnis* and restored by four kinds of *ahara*.

This *Nyaya* is mostly helpful in *chikitsa*, at the time of early nourishment. Just as receptors on the cell surface binds with particular substance, as receptors of glucose bind only with glucose & not with any other substance in the same way *Dhatu*s have capacity to identify their own nutrients.

Secretion of *kledaka-kapha*, may be correlated with mucous i.e. secreted in buccal cavity, oesophagus & stomach. Because, both having the same functions, like adherent qualities, low resistance for slippage, amphoteric & digestive properties.^[29]

Vrushyadravyas (aphrodisiac drugs) does instant *shukravruddhi*, though the *shukra* is the last *Dhatu* in sequence. According to *khalekapotapachkagni* does a *samskara* on *vrushyadravya* then it produces

vrushyadravya rasa & due to that *prabhava* there is instant *shukravruddhi* takes place. The pharmacodynamics and kinetics of *Balya*, *Bhedaniya* & *Vishaghna dravyas* can also be demonstrated in this way. The *aaharagatak* like *Yava sattva* does the *sadyah tarpana*. This *Nyaya* is applicable in *Atyayikachikitsa*.

Upadeyata (Importance) & Significance:

- These *Nyayas* gives the knowledge regarding the *Dhatuposhankrama*.
- The process of homologation of heterogenous foods to compatible *Dhatu*s is completely governed by the functioning of *Agni*- the force behind homeostasis.
- The integrity of location (*Srotas*) too plays an important role in deciding the outcome of process i.e. health or disease
- This process is not devoid of by-products or wastes and their utilization or disposal too is of vital importance.
- *Prayojana* of Ayurveda can be achieved by this, because *sharirasamyata* is depending on the *Dhatuposhan*.
- It is important in aspect of *Chikitsa* also, if the treatment of disease is not done in early stage it move towards deeper tissues indicating difficult outcomes.
- In the treatment of *Jwara*, Charaka advice seven days *Langhana*, it is in accordance of *Dhatuposhana*. Due to the *Langhana* preceding *Dhatu* gets *Niramavastha*. When *RasaDhatu* becomes *Nirama* and person become *Jwaramukta*.
- According to *Samanya – Visheshha Siddhanta* doing *Kshaya & Vriddhi* of *Dhatu*s is only *Chikitsa* of all *rogas* & it depends upon *Dhatuposhana*.

CONCLUSION

All three *Nyayas* will be operational in ensuring normal and proper *Dhatuposhana* in the presence of optimum integrity of *Agnibala* and *Srotabala*. Merely enriching the material components of food is not enough to ensure good nutrition. Thus, Ayurveda proposes an entirely different approach to food, diet, and nutrition that is in strong contrast to the conventional Western approach.

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