Concept of Guna of Tridosha and Regulatory Mechanism

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ABSTRACT
Ayurveda is a holistic system of health care which operates around certain principles and their applications. Ayurveda postulates that everything in this universe is made up of five mahabhutas (fundamental particles) and the configuration of mahabhutas leads to manifestations of some gunas (properties). The human living system is explained by doshaas, dhatu, mala complex. The dhatu forms the basis to perform all physiological functioning of the body, whereas the doshaas regulates this function, and mala is the excretable waste products of this function. Each of these doshaas, dhatu and mala is attributed with a definite sets of gunas, for example, vata (air) has seven gunas- ruksha (dry), sheet (cold), laghu (light), sukhshma (minute), chala (mobile), vishada (clear), khara (rough). Ayurveda opines that guna is the cause which leads to manifestation of an effect. There are 10 opposite pair i.e. 20 shareer gunas (qualities) that functions within the body. It is said that a doshaa performs specific functions on basis of particular guna and the opposite guna found in another doshaa regulates this function. The doshaas do not compete, but complement with each other in terms of their gunas for proper functioning of the body by regulating each other’s functions to the optimum level.

KEYWORDS
Vata, Pitta, Kapha, Guna, Mahabhuta
INTRODUCTION

Ayurveda is a scientific system of health care which has its own theoretical framework around which it operates. These principles are outcome of a supremely intelligent and unbiased set. And these observations have been subjected to repeated rigorous scientific scrutiny. Ayurveda postulates each and every substance of this universe is made up of five basic particles termed as mahabhutas namely aakash (space), vaayu (air), agni (fire), jala (water), prithvi (earth). These mahabhutas form the structural functional basis of any substance. The predominance of a mahabhuta in any substance leads to manifestation of qualities and activities attributed to that mahabhuta. Each mahabhuta has been attributed to an exclusive set of quality and activities to it for eg: prithvi mahabhuta has been attributed to heavy, rough, hard etc. Various combinations and permutations of these mahabhuta give rise to tridosha i.e., vata, pitta, and kapha. According to Ayurveda, guna is considered as the kaaran (cause) which leads to any karya (effect). Therefore manifestation of guna in any substance predisposes the potentiality of an effect, if proper engagement under favourable conditions does happen.

The body comprises grossly of 3 components dosha, dhatu and mala. The dhatu forms the basis to perform all physiological functioning of the body, whereas the doshaas regulates this function and mala is the excretable waste products of this function. These doshaas, dhatu and mala as per panchmahabhautic siddhant (principle) are also formed by five mahabhutas (elements) and consequently they comprise of the qualities that are associated with the predominant mahabhuta. These gunas of doshaas, dhatus and mala interplay with each other to regulate the functioning of the body with an objective to function at an optimum level.

As stated above the doshaas are the primary factors responsible for regulatory mechanism of this body on the basis of their gunas. This article endeavors to revalidate the preceding statement by compiling, analyzing and critically reviewing the contextual information available in classical Ayurveda texts and other resources.

MATERIALS AND METHODS

1. Compilation of information available in print and electronic resources.
2. Analysis and critical review of the compiled information vis-à-vis the hypothetical statement.
3. Discussion and drawing of conclusion regarding the validation of the hypothetical statement.

**OBSERVATION**

As stated above, Ayurveda postulates that *guna* is the reason for any activity and action. These *gunas* are manifested in any substance owing to their respective *mahabhuta* configuration as illustrated below. It is pertinent to register here that each *mahabhautic* predominance is associated with certain sets of *gunas*.

Table 1: Guna of mahabhutas

The three *doshaas* i.e *vata*, *pitta* and *kapha* also comprises of *panchmahabhutas* and possess certain qualities attributed to the predominant *mahabhuta*, and perform specific functions at a particular place. These three *doshaas* are further divided into fifteen subtypes with five subtypes of each three with specific place and function in the body.

Table 2: Properties and site of three *doshaas*.

Table 3: Subdivision of three *doshaas* according to their site.

Table 4: Constituents of *dhatu* and their *karma* (action).

Table 5: Constituents of *mala* and their *karma*.

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**Table 1** Guna of *Mahabhutas*

<table>
<thead>
<tr>
<th>MAHABHUTA</th>
<th></th>
<th>GUNA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jala (water)</td>
<td>Drava (liquid) Snigdha (unctuous) Sheeta (cold) Manda (dull) Mridu (soft) Picchila (mucilaginous) Rasa (taste)</td>
<td></td>
</tr>
<tr>
<td>Agni (fire)</td>
<td>Ushna (hot) Tikshna (sharp) Sukshma (minute) Laghu (light) Ruksha (dry) Vishada (clear) Rupa (sight)</td>
<td></td>
</tr>
<tr>
<td>Vayu (air)</td>
<td>Laghu (light) Sheeta (cold) Ruksha (dry) Khara (dry) Vishada (clear) Shukshma (minute) Sparsh (touch)</td>
<td></td>
</tr>
<tr>
<td>Aakash (space)</td>
<td>Mridu (soft) Laghu (light) Sukshma (minute) Slakshna (smooth) Shabda (sound)</td>
<td></td>
</tr>
</tbody>
</table>

**Table 2** Properties and Site of three *Doshaas*

<table>
<thead>
<tr>
<th>DOSHAA</th>
<th>MAHABHUTA</th>
<th>GUNA</th>
<th>STHAAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vata</td>
<td>Vaayu+ Aakash</td>
<td>Ruksh (dry), Sheeta (cold), Laghu (light), Shukshma (minute), Chala (mobile), Vishad (clear), Khar (rough)</td>
<td>Urahpradesha (chest region)</td>
</tr>
<tr>
<td>Pitta</td>
<td>Agni</td>
<td>Sneha, Ushna (hot), Tikshna (sharp), Drava (liquid), Amla (sour), sara</td>
<td>Amashaya (stomach)</td>
</tr>
</tbody>
</table>
Kapha  Jala+Prithvi  Guru (heavy),  Sheeta (cold),  Mrudha (soft),  Snigdha (unctuous),  Madhura (sweet),  Sthira (immobile),  Picchila (mucilaginous)  Pakwaashaya (intestine)  

Table 3 Subdivision of three Doshaas According to their Site

<table>
<thead>
<tr>
<th>DOSHA</th>
<th>STHAAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Praan vaayu</td>
<td>Murgha (head),  Urha (chest),  Kantha (throat),  Jivha (tongue),  Naasika (nose)</td>
</tr>
<tr>
<td>Udaan vaayu</td>
<td>Naabhi (umbilicus),  Urha (chest),  Kanth (throat),  Naasika (nose)</td>
</tr>
<tr>
<td>Samaan vaayu</td>
<td>Aagamisampasth (near digestive fire),  Aampakwashaya (deuodenum)</td>
</tr>
</tbody>
</table>

| Vyaan vaayu | Sarva shareera (whole body) |

| Aapaana vaayu | Vrudhan (scrotum),  Basti (bladder),  Medhra (penis),  Naabhi (umbilicus),  Vankshan (pelvis),  Guda (anus) |
| Paachaka pitta | Pakwaamashaya madhya (deuodenum) |
| Ranjaka pitta | Yakrut (liver),  Pleeha (spleen),  Amashaya (stomach) |
| Saadhaaka pitta | Hridaya (heart) |
| Aalochaka pitta | Netra (eyes) |
| Bhraajaka pitta | Twacha (skin) |
| Tarpaka kapha | Shir (head) |
| Avalambaka kapha | Urha (chest),  Trik pradesh (chest region) |
| Bodhaka kapha | Jivha (tongue),  Jivhamula (palate),  Kanth (throat) |
| Kledaka kapha | Aamashaya (stomach) |
| Sleshmak kapha | Sandhi (joints) |

Table 4 Constituents of Dhatus and their Karma (Action)

<table>
<thead>
<tr>
<th>DHATU</th>
<th>MAHABHUTA</th>
<th>KARMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rasa (plasma)</td>
<td>Jala</td>
<td>Preenan (provides sense of satisfaction, nourishment to blood and body)</td>
</tr>
<tr>
<td>Rakta (blood)</td>
<td>Jala + Agni</td>
<td>Jeevanam (sustain life activities)</td>
</tr>
<tr>
<td>Maamsa (muscles)</td>
<td>Prithvi + Jala + Agni</td>
<td>Lepan (covers body and nourishes body and meda dhatu)</td>
</tr>
<tr>
<td>Meda (fat)</td>
<td>Jala + Prithvi + Agni</td>
<td>Snehan (provides moistness in eyes and other parts, lubrication and stability)</td>
</tr>
<tr>
<td>Asthi (bones)</td>
<td>Prithvi + Aakash</td>
<td>Dhaaran (supports body, helps for posture)</td>
</tr>
<tr>
<td>Majja (bone marrow)</td>
<td>Jala + Vaayu + Prithvi</td>
<td>Pooran (provides lubrication, strength, and fill cavities of bone)</td>
</tr>
<tr>
<td>Shukra (semen)</td>
<td>Jala + Prithvi</td>
<td>Garbheautpaadand (provides courage, strength, happiness, production of foetus)</td>
</tr>
</tbody>
</table>

Table 5 Constituents of Mala and their Karma

<table>
<thead>
<tr>
<th>MALA</th>
<th>MAHABHUTA</th>
<th>KARMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purish (stool)</td>
<td>Prithvi + Jala</td>
<td>provides strength and support vayu, agni and pitta</td>
</tr>
<tr>
<td>Mutra (urine)</td>
<td>Jala + Agni</td>
<td>Fills urinary bladder</td>
</tr>
<tr>
<td>Sweda (sweat)</td>
<td>Agni + Jala</td>
<td>Provides moistness and softness to skin and support hair and regulates temperature of body.</td>
</tr>
</tbody>
</table>

PHYSIOLOGICAL REGULATION THROUGH GUNA

1. Digestion Process (paachankriya)

The digestion process is carried out with contribution from all the three doshaas. As long as the doshaas are operating in balanced manner the digestion process is optimum. Any disbalance in any of the
doshaas will lead to improper indigestion. In other words each doshaa, specifically its certain guna regulates certain guna of another doshaaa in order to keep the digestion process in balance.

**Fig 1 Digestion**

*Chala guna* of vaayu is responsible for ingestion and gastric movements of the food material. This *chala guna* is regulated by the *sthira guna* of kapha i.e. the food ingested reaches the stomach with the help of *chala guna* of *praan vaayu* \(^\text{10}\). But if the oppositethe guna of *chala* i.e *sthira guna*, which is attributed to kapha doshaa increases in that region, it will decrease the function of *chala guna* and the normal functioning of *praana vaayu* will be affected. E.g. in valaya and galaugh\(^\text{11}\) disease, accumulation of *kapha* in throat region creates obstruction and difficulty in swallowing food as the *sthira guna* of kapha doshaa dominates the *chala guna* of *praan vaayu*\(^\text{12}\). Similarly, if there is *kapha kshaya* within stomach then there will be hyperactivity of *chala guna* leading to quicker gastric emptying.

Figure 2: Digestion process

**Fig 2 Digestion Process**

*Samaan vaayu* residing besides the *paachaka pitta* in *amashaya* enhances its strength and helps in proper digestion. Any vitiation of *samaana vayu* naturally would affect the digestive capacity of the *paachaka pitta*. Therefore, the activity of *Pitta* is regulated by *Vata*. Similarly the *kledak kapha* is responsible for moistening and lubrication of the ingested food owing to its *Drava* and *Snigdha guna*. If the opposite
guna of *snigdha* (*ruksha*) *guna* increases, which is attributed to *vata doshaa* it will lead lack of moistening and lubrication and consequently to disturbance in digestion. Hence *kapha doshaa* is also regulated by *vata doshaa*.

The *ushna guna* of *Paachaka pitta* is primarily responsible for the digestion. But this activity is regulated by the *sheet guna* of *kledaka kapha*. Any vitiation of *kledaka kapha* leads to improper digestion. Therefore, it is evident that the digestion process is mainly carried out by *pitta* but is regulated by *vata* and *kapha* so that the *pitta* functions at an optimal level.

2. **Sensory Function**

Head is seat of all sense organs (*indriyas*) which is nourished by *Tarpak kapha*. Tarpak kapha with its snehan and santarpan effect nourishes *indriyadhishthaan shir* (head) for the proper functioning of all sense organs. Thus, it can be said that kapha is the structural basis of the shira. But the functions of the *indriyas* are performed by, *vata* (*praana vaayu*).

Figure 3: *Indriya adhisthaan (doshas in shiropradesh)*

Figure 4: *Indriyagrahan (physiology and pathology)*

Any structural morbidity i.e. change in the status of *Kapha* as seen in necrosis in the brain subsequent to cerebro-vascular accident leads malfunctioning of the sensory compartment i.e. the functions of *vata dosha*. Therefore, it can be observed...
that though \textit{vata} is effector but its functions are regulated by \textit{kapha}.

3. Joint Movements (\textit{pravartak chestanaam})

\textit{Chala guna} of \textit{Vata dosha} is responsible for all the \textit{chestas} (movement) done by body. Body joints are the main seat of \textit{sleshmak kapha}. \textit{Sleshmak kapha} provides the greasing effect by its \textit{snigdha guna} for soft and unrestricted movements of all joints.\textsuperscript{16}

Figure -5: \textit{Doshaas} in joint movements

Figure- 6: \textit{Manyastambha}

Figure -7: \textit{Sandhigatvaata} (painful joints)

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{doshas.jpg}
\caption{Doshaas in Joint Movements}
\end{figure}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{manyastambha.png}
\caption{Manyastambha}
\end{figure}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{sandhigatvaata.png}
\caption{Sandhigatvaata (Painful Joints)}
\end{figure}

Mobility of joints is due to \textit{chala guna} of \textit{Vata dosha} whereas \textit{Sthira}, the opposite guna of \textit{chala}, which is attributed to \textit{kapha} regulates this function. If \textit{sthira guna} of \textit{kapha} is affected then there is imbalance in the activity of \textit{chala guna} and vice a versa. Also absolute \textit{kshaya} (decrease) of \textit{snigdh guna} in joints leads to the fusion of joints, which is also the function of \textit{kapha} (\textit{sanghaat}). This is evident that for proper or improper functioning of joints, \textit{kapha dosha} regulates \textit{vata dosha}.\textsuperscript{17}

4. Circulatory System

Figure 8: Blood circulation \textsuperscript{18}

\textit{Avlambaka kapha} helps in \textit{avalambana} (provides strength and nourishment – by...
**sthira guna of kapha** to **hridaya** (heart) and **phupphusa** (lungs), whose main functions are performed by **vata**. The following instances reflect how vitiation of **kapha** leads to malfunctioning of **vata**.

**Figure 9:** Eg: Hypotension

**Figure 10:** Eg: **Hridshool**/ Angina pectoris

**Figure 11:** Eg: **siragatvata** / Hypertension

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**Blood circulation**

<table>
<thead>
<tr>
<th>praana / vyaan vayu (lungs + heart)</th>
<th>saadhak pitta (heart)</th>
<th>avalambak kapha (lungs + heart)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>kapha</strong> (sthir) guna increases</td>
<td><strong>vata</strong> acts on rakta dhatu - soshan (absorption) of jala from rakta - blood volume decreases</td>
<td><strong>hypotension</strong></td>
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</tr>
</tbody>
</table>

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**5. Respiratory System**

Upper Respiratory Tract

Figure 12: Upper respiratory tract

**Praan vaayu** takes up oxygen rich air from nostrils to lungs via pharynx and trachea. If the **chala guna** of **vata** is hampered by the **sthira guna of kapha** it will obstruct the pathway leading to dysfunctioning in inhalation process as seen in **balaas**, **satghni** and **galaugh** diseases.22
Figure 13: Pathophysiology in upper respiratory tract

Figure 14: Lower respiratory tract

Figure 15: eg: Swaraghna / Emphysema

Figure 16: Asthma

6. Concept of Oja Vriddhi

Oja is defined as the quintessence of all seven dhatus. It is also known as the superlative degree of kapha. According to
Ashtang Hriday Sutrasthan 14/15 langhan (a therapeutic regimen leading to lightness of the body, usually done by fasting or administration of light diet) leads to ojavriddhi. Langhana is effectuated by Laghu guna. But oja can be produced from dhatu, which needs guru guna for their increase. Thus, it is evident that guru guna, to perform, optimally needs optimal laghu guna.

Fig 17 Concept of Langhan and Ojavriddhi

GUNA PAIRS AS REGULATORY MECHANISM

DISCUSSION –

Ayurveda postulates Guna as the reason for any activity or action. In (Ca.Su:1, Ca.Su:26), there are different types of Gunas described in Ayurveda. 10 pairs or 20 Gunas are termed as Shareera gunas i.e. these gunas are observed in the body. Each pair of Guna contains opposite gunas, one is known as Santarpaka guna and the other one is Apartarpaka e.g. Guru (heavy) – santarpaka and Laghu (light) - apatarpaka. Such a classification and further enumeration is done against the background of classifying the entire universe as Agni / Ushna / Surya (hot) and Soma / Sheeta / Moon (Cool). The manifestation of Guna is attributed to the Mahabhuta and their respective configuration within the substance. Each and every component of the body is expressed in terms of its Gunas, e.g. Vata dosha as chala, raksha, etc, Rasa dhatu as drava, snigdha and so on. The structure-functional status of a component is thus decided and influenced by its gunas.

In other words anatomy, physiology and pathology of any body component is due to its guna.

It is interesting to notice that the shareera gunas are described in opposite pairs. What could be the basis of such pair classification? We compiled the guna – activity instances from the classical texts, modern medicine literature and available experimental information and subsequently endeavoured to find the link between the activity causing guna and its opposite guna. These linkages are discussed below.

1. It was observed from the digestion process that Chala guna of Vayu, which is responsible for the movement of food within the GIT (effector guna) is regulated by the Sthira guna of Kapha (regulator guna). Similarly snigdha guna of Kapha,
which facilitates the breakdown of the food particles is regulated by Ruksha guna of Vata. The ushna guna of Pitta, which is responsible for the digestion is regulated by the Sheeta guna of Kapha. Any change in the regulatory guna produces hyper or hypo or mal functioning of the effector guna.

2. The sthira guna of Kapha in a joint act as the regulator guna for the balance functioning of the effector chala guna of Vata dosha. Any imbalance in the regulator guna will affect the effector guna by either leading to painful and restricted movements or joint stiffness.

3. Head is the main seat of tarpak kaph which act as the regulator guna for the effector chala guna of Vata by nourishing the indriyas. Any rearrangement in the regulator guna of kapha affects the normal functioning of chala guna of vata dosha which is responsible for the responses of sensory organs.

4. In the circulatory system sthira guna of kapha regulates the effector chala guna of vata. For eg; If sthira guna increases in the blood vessels (cholesterol deposition) leading to narrowing of blood vessels this results in Hypertension. Hence the kapha regulates the effect of vata dosha.

5. In respiration process snigdha guna of kapha is regulated by the ruksha guna of vata dosha as kapha provides strength to heart and lungs which are main organs of respiration.

6. Laghu guna regulates the optimum utilization of Guru guna as seen in langhana. Thus, after fasting light food is advised because the laghu guna facilitates higher utilization of guru guna.

It could be observed from the above examples that each guna regulates its opposite guna i.e. a guna performs its optimum activity under the regulation of its opposite guna. It can be seen that without any change in the effector guna, the activity can increase or decrease if the opposite guna is decreased or increased. These observations was found in classical texts (aptpadesha), can be observed in human body (pratyaksha) and could be interpreted (anumana and yukti). Therefore, all the four pramanas suggest that inter-regulation is one of the inherent concepts in the pair classification of shareera gunas. This regulation maintains the optimum intensity of any activity which contributes to the balanced state of functioning i.e. health.

**CONCLUSION**

In the pair classification of Shareera gunas, one guna of the pair is the effector guna and the other one is the regulator guna. The balance of tridosha is of prime important...
for the normal body physiology. These *doshaas* complements each other by keeping their *gunas* in a balance form. These opposite pairs of *guna of doshaas* act as the effector and the regulator. Any change in the *guna of regulator dosha* affects the *guna of effector dosha*.

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7. Sushrut: Sushrut Samhita: ayurved tattva sandipika hindi commentary by kaviraj ambikadutta shastri; part 1; chaukhamba sanskrit sansthan ,varanasi; sutrasthan 15/6.


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30. Sushrut: Sushrut Samhita: ayurved tattva sandipika hindi commentary by kaviraj ambikadutta shastri; part 1; chaukhamba sanskrit sansthan, varanasi; sutrasthan 15.