ARE RASAPANCHAKA PHYSICAL EFFECTS OR PHARMACOLOGICAL EFFECTS- A DETAIL REVIEW

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ABSTRACT
The study of natural drugs comes under the main branch of Ayurveda-Dravyaguna: - which deals with the knowledge of dravya-. Each dravya consists of five properties- Rasapanchaka. Rasa-Taste, Guna-Predicament, Vipaka- Post –digestive taste, Virya- Potency, Prabhava- Achintaya (which is unexplainable). Out of five, the four properties- rasa, guna, vipaka and virya (rasachatushtaya) are the perceptible property of a dravya. All these days rasapanchaka is intended at explaining pharmacological activity. The properties which are present in rasapanchaka are mostly physical in nature as they are made up of the physical entities i.e. panchamahabhuta. The thing which is physical in nature is bound to be perceived through our indriyas. So anything which is made up of panchabhutas is perceivable through indriyas (senses). In this study an effort is attempted to explain that rasapanchakas are physical effects and have pharmacological effects as well.

KEYWORDS: rasa, guna, vipaka, virya, prabhava, indriya grahya, panchamahabhuta etc.

INTRODUCTION
Dravyaguna is the main branch of Ayurveda deals with the knowledge of the dravya on the basis of nama (nomenclature), Rupa (morphology) and guna (properties), it is more a pharmacotherapeutics.

Dravya – Yatrasrhitah karmgunah karanaam samvayi yat tadrvayam.\(^1\) -where karma and guna resides with inseparable relationship.
The \textit{rasapanchaka} are the five components of \textit{dravya} called as \textit{guna} of a \textit{dravya}. The classical definitions of \textit{rasapanchaka} are as follows:-

\textbf{Rasa (taste)} - Raso nipate dravyanam.\cite{2} when a substance is brought into touch with the Rasanendriya (or tongue), then the taste will be known.

\textbf{Guna (predicament)} - Samvaiy tu nischesta karanam gunah.\cite{3} i.e, \textit{guna} as the character or property which will remain in a \textit{dravya} with inherent relationship and is devoid of action.

\textbf{Vipaka (post-digestive taste)} - Vishishtha jarananishtha kale rasa visheshasaya pakah pradurbhavah vipakah.\cite{4} The end product of a \textit{dravya} which is the outcome of digestion is known as \textit{Vipaka}. \textit{Vipaka} is the bio-transformative phase of \textit{rasa}.

\textbf{Virya (potency)} - Vishishtha samrathyam sampanna guna, i.e, Potent and efficient most factor which is called as \textit{virya} that is bio-energy.\cite{5}

\textbf{Prabha} –Rasavirya vipakanam sannayam yatra lakshyate. Visheshah karanam chaiv prabhavastasaya sa smritah.\cite{6}

It is called as \textit{Achintaya} i.e., which is unexplainable on the logic of Bhutas.

The RASAPANCHAKA is a unique theory where properties of the drug are used to explain their pharmacological effect in the body. The pharmacological actions exhibited by \textit{rasapanchaka} i.e \textit{gunaparabhava}, is almost identical to the properties existing in the human body system.

\textit{Na tu kewalam gunaprabhavadev dravyani karmukani bhavanti; Dravyani hi dravyaprabhavad gunaprabhavad dravyagunaprabhavaccha.}\cite{7}

In above quotation the first kind of effect namely “\textit{guna parabhava},” is explained by \textit{Rasa}, \textit{guna}, \textit{vipaka} and \textit{virya (rasachatushtaya)} which are perceptible properties (\textit{guna}) of a \textit{dravya}.

80-90\% of total drugs’ action can be explained logically with the help of their properties. Such physical linkage is seldom seen in other pharmacological sciences.
The rasapanchaka are the physical properties of a dravya. Physical properties can be identified by any level of intelligence (i.e. Indriya grahya). The knowledge of physical properties is original information.

Physical properties indicate the totality of the drug in pharmacological action. These physical properties have been identified in the human body.

AIMS AND OBJECTIVES
1. To understand that Rasapanchaka are physical effects.
2. To evaluate that rasapanchaka present in a dravya have pharmacological effects.

MATERIALS AND METHODS
Classical texts and commentaries were studied to understand rasapanchaka as physical effects (perceivable through senses or indriya grahya) as well as pharmacological effects present in a dravya.

CONCEPT OF RASAPANCHAKA AS PHYSICAL EFFECTS
A dravya is divided into karana and karya dravya:
Karna dravyas are nine- “Khadinyatma manokalo dishashch dravya sangraha”. [8]
Karya dravyas are all the manifestations of these nine karna dravyas.

As “Sarva dravyam panchbhautikasminnarthe” (9) i.e all karya dravya are the manifested forms of pancha mahabhutas. How these panchamahabhutas can be perceived???

Five pentads of senses i.e panch indriya (five senses), panch indriya dravya (five sense material), panch indriya adhisthana (five sense organs), panch indriya artha (five sense objects), panch indriya buddhi (five sense perception) shows a relation of these mahabhutas with their respective indriya. And these indriyas are particular for its mahabhutas due to tulyayonitva.

The rasapanchaka are the five components of dravya called as guna of a dravya and these are: Rasa, Guna, Virya, Vipaka, Prabhava

1. RASA-
Rasa are six in number.
Table no.1. *Rasa* and its *bhoutika* composition

<table>
<thead>
<tr>
<th>Sr.no.</th>
<th>Rasa</th>
<th>Bhoutika composition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Madhura</td>
<td>Prithvi+jala</td>
</tr>
<tr>
<td>2</td>
<td>Amla</td>
<td>Prithvi+Agni</td>
</tr>
<tr>
<td>3</td>
<td>Lavana</td>
<td>Jala+agni</td>
</tr>
<tr>
<td>4</td>
<td>Katu</td>
<td>Vayu+agni</td>
</tr>
<tr>
<td>5</td>
<td>Tikta</td>
<td>Vayu+akasha</td>
</tr>
<tr>
<td>6</td>
<td>Kashaya</td>
<td>Vayu+prithvi</td>
</tr>
</tbody>
</table>

“Rasanartho rasastasya”[^10] i.e rasa is perceived via rasanendriya. It is totally a physical effect. Six *rasas* are identified due to six types of combinations of *panchabhutas* by which they become perceptible through tongue in six ways.

Each *rasa* is attributed with three *gunas*. These *gunas* are termed as “Anugunas”- coined by Dr. M Pramkusha Rao. The relation of *rasa* and *gunas* is as follows[^11]

Table no. 2. *Rasa* and *Guna* relation

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Rasa</th>
<th>Guna</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Madhura</td>
<td>Snigdha, Sheeta, Guru</td>
</tr>
<tr>
<td>2</td>
<td>Amla</td>
<td>Laghu, Ushna, Snigdha</td>
</tr>
<tr>
<td>3</td>
<td>Lavana</td>
<td>Na ati guru, Snigdha Ushna</td>
</tr>
<tr>
<td>4</td>
<td>Katu</td>
<td>Laghu, Ushna, Ruksha</td>
</tr>
<tr>
<td>5</td>
<td>Tikta</td>
<td>Ruksha, Sheeta, Laghu</td>
</tr>
<tr>
<td>6</td>
<td>Kashaya</td>
<td>Ruksha, Sheeta, Guru</td>
</tr>
</tbody>
</table>

These *anugunas* present in each *rasas* also have physical effects, can be assessed by the tongue because among panchindriyas – sparsendriya is the only indriya which pervades all over the body (and is in inherent relation with manas)[^12], so it pervades over tongue also.

This means tongue performs two sensory functions: - one is sensing taste of the substances and another is sensing the properties of the taste substances.

e.g. if a person is having hot tea, the tongue is perceiving two things simultaneously, one taste of the tea and another hotness of the tea. Similarly if a person is having a sweet (for instance rasagulla) he perceives sweetness and aniontness (i.e. snighdata), coolness (i.e. sheetata) as well in the mouth.

Thus, tongue: - the *rasendriya* performs two functions- one is identifying the taste of the *dravya* and another *guna* present in the *dravya*.
2. **GUNA**-

There are totally 41 gunas accepted by the Ayurveda Acharayas commonly. They are:

<table>
<thead>
<tr>
<th>Guna</th>
<th>Bhautika Composition</th>
<th>Indriya grahyatwa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adhyatma gunas</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Gurvadi gunas</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Paradi gunas</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Visishta gunas</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>41 gunas</strong></td>
<td></td>
</tr>
</tbody>
</table>

Out of 41 gunas, 20 gurvadi gunas are significant, out of which eight gunas are more significant and they are termed as utkrishta gunas.

Acharaya Susruta.[13] has given the physical identification (*indriya grahya*) of these following gunas:

Table no. 3. Identification of Gunas

<table>
<thead>
<tr>
<th>Sr.no.</th>
<th>Guna</th>
<th>Bhautika Composition</th>
<th>Indriya grahyatwa</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Guru</td>
<td>Jala+ Prithvi</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Laghu</td>
<td>Vayu+ Akasha+ Agni</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Sheeta</td>
<td>Jala</td>
<td>Sparsha</td>
</tr>
<tr>
<td>4.</td>
<td>Ushna</td>
<td>Agni</td>
<td>Sparsha</td>
</tr>
<tr>
<td>5.</td>
<td>Snigdha</td>
<td>Prithvi+ jala</td>
<td>Chakshu</td>
</tr>
<tr>
<td>6.</td>
<td>Ruksha</td>
<td>Vayu</td>
<td>Chakshu</td>
</tr>
<tr>
<td>7.</td>
<td>Mridu</td>
<td>Jala+Akasha</td>
<td>Sparsha</td>
</tr>
<tr>
<td>8.</td>
<td>Tikshna</td>
<td>Agni</td>
<td>Rasna</td>
</tr>
</tbody>
</table>

3. **VIRYA**-

Virya are the most potent gunas present in a dravya. The ashta utkrishta gunas are termed as virya. Virya can be perceived from rasnendriya to upto its presence in body.

Viryam yavadadhivaasanipaatacchoplabhyate.[14]

Hence virya can be perceived via. Two ways

* Nipate- rasnendriya
  * Adhivaase-through actions
    * i.e. Nipaate and Adhivaase both.

E.g. *katu* dravyas are sensible through skin (causes burning sensation i.e. *ushnata*) and its action (burning sensation) can be inferred by the systemic response also.
4. **VIPAKA**-

“vishistha jarananishtha kale rasa visheshasaya pakah pradurbhavah vipakah”\(^{[4]}\)

Paka is of two types’ i.e peelu paka and peethar paka

- **Peelu paka** (chemical changes)
- **Peethar paka** (physical changes)

If *paka* is at physical level then it may be perceived through *indriya* for example a fruit is changed from its *apakwa* stage to *pakawa* stage and its changing colour, taste, smell according to *kala* can be noticed through *indriya* (*chakshuindriya* for color, *rasendriya* for taste, *ghranindriya* for smell)

If *paka* is at chemical level it cannot be perceived through *indriya* but is to be known by its actions on body (the pharmacological effect). *Viapakah karmnishtheya\(^{[15]}\)*

For example if *srishta vina mutra* and *kaphotklesha* are seen then that *dravya* will be consider as having *madhura vipaka*.

**THE PHARMACOLOGICAL EFFECTS OF RASAPANCHAKA**

The pharmacological actions exhibit by *rasapanchaka* depends upon the *panchabhoutika* composition of it. The main treatment principle of *Ayurveda* is to increase the decreased *bhavas* in body and decrease the increased *bhavas* in the body; accordingly the contents of *rasapanchaka* are chosen to treat the body.

**RASA**

**MADHURA RASA**: some of its pharmacological effects are listed below\(^{[16]}\).

Effect on *doshas*: *vata*-pitta shamaka and *kapha* prakopaka

Actions: *indriyaprasadana, ojo vardhaka, dhatu vardhana, trishna prashamana, daha prashamana, keshaya, kanthya, brihmanaya* etc.

Indications: *vata* rogas, *murcha, asthi bhagna, rakta* –*pitta* etc.

**AMLA RASA**: some of its pharmacological effects are listed below\(^{[17]}\).

Effect on *doshas*: *pitta*-kapha vardhaka, *vatanulomana*.

Actions: *dipana, brihmana, hridya, prinana* etc.

Indications: *agnimandya, vata* rogas etc.

**LAVANA RASA**: some of its pharmacological effects are listed below\(^{[18]}\).
Effect on *doshas*: vata-shamaka, pitta-kapha vardhaka.
*Actions*: deepana-pachana, sroto-shodhaka, dhatu–shaithilyakara, ruchya etc.
*Indications*: vata rogas, agni mandya, sula etc.

**KATU RASA**: some of its pharmacological effects are listed below\(^{[19]}\)
Effect on *doshas*: kapha-shamaka, vata-pitta vardhaka.
*Actions*: mukha-shodhaka, agnideepana, indriya dourbalya, kanduhara, vrana ropna, krimi hara, sroto vivarana etc.
*Indications*: kandu, vrana, agnimandy etc.

**TIKTA RASA**: some of its pharmacological effects are listed below\(^{[20]}\)
Effect on *doshas*: pitta-kapha shamaka, vata-vardhaka
*Actions*: visha hara, krimihara, kanduhara, lekhana, stanya shodhana etc
*Indications*: amla-pitta, ama vata, krimi roga, medo roga etc.

**KASAYA RASA**: some of its pharmacological effects are listed below\(^{[21]}\)
Effect on *doshas*: pitta- kapha hara, vata- vardhaka etc.
*Actions*: sangrahi, sandhana kara, ropana, soshana, stambhana, rakta prasamana, lekhana, twachaya, vishtambhi etc.
*Indications*: atisara, twaka vikara, medoroga etc.

**GUNA**

There 20 *guru*-*vadi* gunas which are also called as ‘*sharirika gunas*’ because of the similarity of the building constituents of *gunas* with the body building constituents.

These *gunas* are arranged in 10 pairs opposite to each other. Out of 20, 8 *gunas* are the most prominent *gunas* (*utkrishta gunas*) as they are therapeutically more potent. Opposite *gunas* are selected in order to enhance the *dhatu samyata* in the body.

The pharmacological actions of these *gunas* are listed below\(^{[22]}\):

*Guru* – brihmana  
*Laghu* - langhana  
*Sheeta* - sthambhna  
*Ushna* - swedana  
*Snigdha* - snehana  
*Ruksha* - shoshana  
*Mridu* - shaman
Tikshana- shodhana

VIRYA: the most potent and efficient factor in a drug, which is time bound, depends upon the good storage conditions of the drug. The ashta utkrishta gunas are termed as virya which are categorised into two:

Table no.4. Action of virya on doshas

<table>
<thead>
<tr>
<th>VIRYA</th>
<th>PANCHABHOUTIKA COMPOSITION</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheeta Prithvi +Jala</td>
<td>Pitta shamaka</td>
<td></td>
</tr>
<tr>
<td>Ushna Agni+ Vayu+Akasha</td>
<td>Kapha shamaka</td>
<td></td>
</tr>
</tbody>
</table>

VIPAKA: Vipaka is the post-digestive phase of Rasa through the action of Jatharagni (digestive juices).

Bhadanta Nagarjuna mentioned this transformation as the characteristic feature of Vipaka: “Parinamalakshano vipakah”.[23]
i.e., Vipaka possesses change as its characteristics which are brought by digestion and assimilation.

“Gunah praadhanah”[24]
“Vipakakarantvaat”[25]

According to Bhadanta Nagarjuna the guna importance is established with a logic says that “Gunas are important”, as Guna causes Vipaka. So as vipaka depends on guna (laghu or guru).

Vipaka is of three types[26]

Table no. 5. Action of vipaka on dosha, dhatu and mala

<table>
<thead>
<tr>
<th>Vipaka</th>
<th>Action on dosha</th>
<th>Action on dhatu</th>
<th>Action on mala</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madhura (guru)</td>
<td>Kapha kara</td>
<td>Shukrala</td>
<td>Srishtavinmutra</td>
</tr>
<tr>
<td>Amla (laghu)</td>
<td>Pitta kara</td>
<td>Shukranashana</td>
<td>Srishtavinmutra</td>
</tr>
<tr>
<td>Katu (laghu)</td>
<td>Vatala</td>
<td>Shukraha</td>
<td>Badhavinmutra</td>
</tr>
</tbody>
</table>

PRABHAVA

It is a specific action of a drug can’t be explained on the basis of rasa, guna, vipaka and virya or bhoutika composition of drug.

Acharaya Susruta has said that “amimansayanyachintyaani prasiddhani swabhavatah. Aagamenopyojyani bhesajani vichakshaneh”... sahasrenapi hetunam nambhashatatadivirechayte”.[27]
i.e. some drugs don’t seek any explanation about how does they act, they act by virtue of their swabhava which results in prabhava : a specific action. So one should follow the instructions of great seers how to use such drugs and should not get into reasoning and explanations because thousands logics have not proved that why ambshathadi drugs exerts virechaniya property.

DISCUSSION AND CONCLUSION
The above postulates depicts that a dravya is made up of panchamahabhuta by which a dravya is perceivable through indriyas. The gunas of dravya are rasapanchaka which are again composed of panchamahabhuta. Among rasapanchaka some (not all) of the properties are perceivable through indriyas which means they are physical effects. Guna and karma both reside with inherent relation in a dravya. So a dravya is responsible for karma i.e. responsible for actions, by virtue of its gunas which are nothing but rasapanchaka (rasa, guna, vipaka, virya and prabhava) which depicts that rasapanchaka exhibit pharmacological application also.

Hence rasapanchaka are both physical effects and pharmacological effects as well.

REFERENCES
6. Agniveshacharya, Charaka Samhita, Elaborated by Charaka and Drudhabala with Ayurveda Dipika Commentary by Chakrapanidatta, Edited by Yadavaji Trikamaji


