A Conceptual Review on Dosage of Rasayana Formulations

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ABSTRACT

Rasayana drugs are found from single drug therapy to compound formulations. Number of formulations, may be primary or secondary are portrayed to possess Rasayana effect. The dose of many of these Rasayana drugs were not specified along with the Phalasruti. So as per general rule the dose specified for the dosage form have to be considered. Meanwhile it is pertinent to note that these formulations were indicated in certain diseases as curative apart from the Rasayana action. Whether the action as Rasayana and action as Vyadhihara is attained with similar dose is the question which was key in this work. A thorough literature search was carried out to collect Rasayana drugs from single drug to compound formulations from different Samhita and other books of Ayurveda. Further an attempt was made to understand the relation on mode of administration, dose of Rasayana and its action on the body. It was observed that the dose of certain drugs used as Rasayana were higher from the general dosage, like in case of Shilajatu rasayana. Or an increasing order of dose along with specified duration was noted in the administration of Jyotishmati taila, Vardhamana pippali/bhallathaka, Parpati kalpa, etc. These instances suggests that the dose of the Rasayana yogas need to be validated rather than considering the dose mentioned for these yogas as per the kalpana.

KEYWORDS

Rasayana, Matra, Rasayana yoga, Dose
INTRODUCTION

Ayurveda therapeutics aims at both curative and preventive aspect of the diseases or disorders. Ancient scholars have advised to follow Dinacharya, Ritucharya and other regimens to stay healthy and attain longevity. Rasayana are also the means with which the immunity and strength of the individual can be maintained. There are numerous rasayana that have been specified, derived from single drugs as well as compound formulations. Rasayana chikitsa is given much importance by including it under Ashtanga (eight branches) of Ayurveda. Rasayana has a multidimensional effect on human body. Important benefits of rasayana that have been highlighted by ancient scholars includes improving memory, intelligence, lustre, complexion, voice, freedom from disease, optimum strength of body and senses, etc. along with increasing the longevity.

Use of rasayana can be found from single drug therapy to compound formulations. Number of formulations, may be primary or secondary are also portrayed to possess rasayana effect. Formulations of metal and mineral origin like Bhasma, Pishti, Parpati, Pottali, Koopipakva, etc. are always tagged with a suffix rasayana. However, the matra (dose) with which the formulations are used in therapeutics is the key to the attainment of expected or desired efficacy. The aushadha (medicine) when taken in proper quantity produces good results, and it does not cause any undesired results. Hence the dose with which any medicine is administered should neither be heena matra (less dose) nor be ati matra (over dose) as it either won’t be able to produce the desired effect or it may harm the health of the person.

MATERIALS AND METHODS

A thorough literature search was done to collect rasayana yogas in different samhita and other books of Ayurveda. The words like Rasayana, Ayushya, Deerghayu, Shatayu, Sarvarogaghna and others with similar meaning have been included in the search. In the first step only single drugs were enlisted which have been specified to possess rasayana effect. In the second step formulations of herbal, herbomineral and mineral origin with any one of above words in phalashruti were included. Further an attempt was made to understand the relation on mode of administration, dose of rasayana and its action on the body.

OBSERVATION AND RESULTS:

The list of drugs and formulations are categorized into the following subgroups for ease of understanding.
I. Single drugs which possess rasayana effect:\(^4\)

- Aswagandha (Withania somnifera),
- Amalaki (Emblica officinalis),
- Brahmi (Bacopa monnieri),
- Haritaki (Terminalia chebula),
- Palandu (Allium cepa),
- Lashuna (Allium sativum),
- Bhringaraja (Eclipta alba),
- Bhallataka (Simala monosperma),
- Tila (Sesamum indicum),
- Gokshura (Tribulus terrestris),
- Agaru (Aegle marmelos),
- Vidarikanda (Pueraria tuberosa),
- Musali (Asparagus adseendens),
- Guduchi (Tinospora cordifolia),
- Jyotishmati (Celestrus paniculatus),
- Shankhpushpi (Convolvulus pluricaulis),
- Kushmanda (Benincasa cerifera),
- Shatavari (Asparagus racemosus),
- Vatsanabha (Aconitum ferox),
- Bakuchi (psoralea corylifolia),
- Punarnava (Boerhavia diffusa),
- Nagabala (Sida veronicaefolia),
- Chitraka (Plumbago zeylanica),
- Khadira (Acacia catechu),
- Kakamachi (Solanum nigrum),
- Bilwa (Argyrea speciosa),
- Mandukaparni (Centella asiatica),
- Yashtimadhu (Glycyrrhiza glabra),
- Kumudda (Nymphaea alba),
- Saariva (Hemedomus indicus),
- Mudgaparni (Phaseolus trilobus),
- Murva (Marsdenia tenacissima),
- Mashaparni (Teramnus labialis),
- Bala (Sida cardifolia),
- Pippali (Piper longum),
- Tuvaraka (Hydnocarpus wightiana),
- Kashmara (Gmelina arborea),
- Dadima (Punica granatum),
- Draksha (Vitis vinifera) and Guggulu (Commiphora mukul).

II. Formulations of varied dosage forms with Rasayana action

<table>
<thead>
<tr>
<th>Dosage form</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swarasa</td>
<td>Bringaraja rasayana, Mandukaparni swarasa</td>
</tr>
<tr>
<td>Kalka</td>
<td>Punarnava rasayana, Nagabala kalka</td>
</tr>
<tr>
<td>Churna</td>
<td>Ashwagandha Rasayana, Yashtimadhu Churna, Swadamshtradi Churna, Vacha Rasayana, Vidangadi Churna, Pippali Rasayana, Bhringarajadi Churna, Varahi Churna, Shatavaryadi Churna, Maha Nimbadi Churna, Narasimha Churna, Kuchuradi Churna</td>
</tr>
<tr>
<td>Leha</td>
<td>Agastyha Haritaki Rasayana, Vasishta Haritaki Rasayana, Kushmanda Rasayana, Chyvanaprasha, Ashwagandhaadi Leha, Abhayamalaka Avelahe</td>
</tr>
<tr>
<td>Vati</td>
<td>Langalyadi Gutika, Shiva Gutika, Pippalyadi Rasayana Vati, Lashunadi Vati, Gandhaka Vati, Anasa Mitra Vati, Mrita Sanjivani Vati</td>
</tr>
<tr>
<td>Guggulu</td>
<td>Yogaraja Guggulu, Kaishora Guggulu, Loha Guggulu, Gokshuradi Guggulu, Maha yogaraja Guggulu</td>
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<tr>
<td>Ghrita</td>
<td>Narasimha Ghrita, Saraswata Ghrita, Brahamdi Ghrita, Vachadi Ghrita, Pancharavinda Ghrita, Chatushkaavalya Ghrita, Lashuna Ghrita, Gadachyadi Ghrita, Kalyanaka Ghrita, Brahmi Ghrita, Shatavari Rasayana</td>
</tr>
<tr>
<td>Asavarishta</td>
<td>Kumaryasava, Dashamoolasava, Saraswataarishta, Ashwagandhaarishta</td>
</tr>
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</table>
III. Dose of rasayana explained in phalasruthi:

Churna kalpa: No dose is specified for many of the churna yogas such as Varahi churna, Ashwagandha rasayana, Yashtimadhu churna and Bhringarajadi churna, etc. whereas the dose of Haridra churna is documented as half pala (24 gms).

Vati / gutika kalpa: Dose is mentioned for formulations like Gandhakavati (badara pramana matra, approx-500mg), Manasa mitra vati (bhunimba phala pramana) and Shiva gutika (Aksha pramana). At the same time no particular dose was mentioned for formulations like Lashunadi vati.

Guggulu rasayana: In the phalasruthi of Yogaraja guggulu, it is told that “ato matram prayunjeeta yatheshtahara vaanapi”, dose should be decided without interfering the daily meals. i.e., no particular dose or method of administration is mentioned for it and 1 shaana matra (3g) is the dose told for Yogaraja guggulu explained in Sharangadhara samhita. Whereas for Kaishora guggulu one shaana matra (3g) is mentioned particularly.

Avaleha kalpa: Abhayamalakavaleha does not have a specific dose being mentioned; dose of Agasthya haritaki rasayana is mentioned as 2 abhaya pramana. In the phalasruthi of Chyavana prasha the dose with which the medicine is administered should be in a dose which does not interfere the daily meals i.e., “yoparudhyanna bhojana”. Similarly in Brahma rasayana “noporundhyaadaahaaramekam matra” is mentioned. In the context of kushmanda rasayana dose is mentioned as pala matra i.e., one pala dosage (48g).

Ghrita kalpa: No specific dose is mentioned for ghrita kalpa like Narasimha ghrita, Saraswatha ghrita and Brahmi ghrita.

Taila kalpa: External uses like abhyanga, nasya – according to necessity the matra is decided, for example Narasimha taila, Balashvagandha taila, Bhringaraja taila, etc. Whereas, for taila kalpa which is used internally like Tuvaraka taila matra is mentioned as 1 karsha (12 gms).

Asava, arishta kalpa: Particular dose is not mentioned for arishta like Dashamularishta. Palaardha matra (½ pala dose) is told for Ashvagandharishta and shaana matra (3gms) is mentioned for Sarasvatarishta.

Parpati kalpa: Kalpa prayoga with 1 ratti increase dose is mentioned for suvarna parpati and 2 ratti increased dose is mentioned for Panchamrita parpati.

Bhasma kalpa: like Loha bhasma should be used in a dose of 1 gunja pramana.
(125mg), Suvarna bhasma\textsuperscript{33} dose in 1/8 – ¼ ratti (15-30mg) and Tamra bhasma\textsuperscript{34} - ¼- ½ ratti (30-60mg).

**Rasayogas:** like Yogendra rasa\textsuperscript{35} dose is mentioned as 2 ratti (250mg) and dose of Rasaraja is 5 gunja / 5 ratti (625mg) and Vasantha kusumakara rasa\textsuperscript{36} is 2 gunja / 2 ratti.

**IV. Rasayana prayoga and dose:**
A. “Vardhamana Krama” is a special thinking of Acharya to advise the drugs action in excessive dose and to make the biological platform ready to assimilate the greater dose of the same drug gradually. Here the drug is administered starting with a particular dose with daily increase of a uniform dose till reaching a predefined higher dose. Then reducing the dose daily and bringing back to the started dose to avoid the dependency or withdrawal effects. The gradual increase of dose may reach the deeper tissues in due course of time. Example: Vardamana pipalli, vardhamana bhallathaka rasayana, etc.

**Pippali vardhamana rasayana**\textsuperscript{37, 38}: For 10 days daily increase 10 pippali gradually along with goksheera and again reduce 10 pippali gradually use for 10 days. This is continued till it becomes 1000 pippali prayoga and becomes rasayana. Dose of the pippali for administration also depends on the bala of the person. A person with heena bala (less strength) won’t be able to tolerate the higher dose of the drug administered. Initial administration or the starting dose with the administration of 10 pippali is considered as uttama (best) matra and can be considered for a person with good strength. Administration of 6 pippali as madhyama (medium) matra and for person with medium strength, whereas administration of 3 pippali as starting dose is considered as avara (least) matra and can be given to a person have least strength.

**Vardhamaana bhallataka rasayana**\textsuperscript{39}: Kwatha (decoction) should be prepared with 5 bhallataka phala after shodhana. This prepared kwatha has to be taken as paana by applying ghrita to the oral cavity. Daily increase 5 bhallataka phala and prepare kwatha until bhallataka becomes 70 in number. Further reduce 5 bhallataka phala daily until bhallataka becomes 5 in number and then stop.

B. **Kalpa prayoga of parpati** \textsuperscript{40}: Vardhamana karma administration is also seen in parpati dose administration where in chronic cases Kalpa prayoga of parpati is mentioned. Dose starts with 2 ratti and further increase of 1 ratti daily till it reaches 10 ratti dose. Then reduce 1 ratti daily till it reaches 2 ratti. Whereas Chakrapani has mentioned the increase of 2 ratti daily till it reaches 12 ratti dose.

C. **Administration of Jyotishmati taila**\textsuperscript{41}: Daily for 6 maasha, Dose is increased
gradually till it reaches up to 4 tola. Dose should not increase more than 1 pala daily.

D. **Prayoga of Shilajatu rasayana**[^42]: One, three and seven *sapthaha* (weeks) of therapy in one *karsha*, half *pala*, and one *pala* as the dose are the *heena*, *madhyama* and *uttama* respectively for the use of Shilajatu rasayana.

E. **Administration of Lashuna rasayana**[^43]: Administration of very high dose can also be noted in Lashuna rasayana. *Avara matra*: 4 pala, *Madhyama matra*: 6 pala, *Utthama matra*: 8-10 pala.

F. Many rasayanas are administered for longer duration i.e., months to year

**Bhringaraja rasayana**[^44] - daily for 1 month

**Varahikanda yoga**[^45] - 1 month

**Sweta avalguja beeja rasayana** - 1 month

**Loha rasayanam**[^46] - 3 months

**Thriphala kalka rasayana**[^47] - 1 year duration

**Haritaki rasayana** - 1 year

**Purnarnava rasayana**[^48] - till 1 year

G. **Relation of Duration and Rasayana effect:**

**Brahmi swarasa rasayana**[^49] if administered for 7 days, the person becomes *tejasvi* and *medhavi*, if continued for another 7 days one can write *ichita grantha* and if consumed further for 7 days it enhances *smarana shakti*, i.e. the person will be able to get the manifold benefit of it. *Vacha ghrita rasayana*[^50] produces benefits like increase in *sravana shakti*, *smruti shakti*, *dharana* of *sravana shakti* and gets rid of *papakarma*, *garuda samana drushti* when consumed for 12, 24, 36 and 48 days respectively.

**DISCUSSION**

A number of single drug & formulations were mentioned particularly in *Rasayana chikitsa* in different *Samhita*. The dose of many among these *Rasayana* drugs were not specified along with the *phalasruti*. So as per general rule the dose specified for the dosage form have to be considered. Meanwhile, it is pertinent to note that these formulations were indicated in certain diseases as curative apart from the *Rasayana* action. Whether the action as *Rasayana* and action as *vyadhihara* is attained with similar dose is the question which was key in this work. Because the dose of these formulations were not differentiated for *rasayana* effect from *vyadhihara* effect.

It was observed that the dose of certain drugs used as *rasayana* were higher from the general dosage, like in case of Shilajatu rasayana. The general dose is up to 1 gm where the dose mentioned under *rasayana* ranges from 12 gm to 48 gm. While the administration of *Parpati* in *Kalpa prayoga* the dose is higher (in 10 days upto 10 *ratti*) when compared to *Samanya prayoga* i.e., 1

[^42]: Prayoga of Shilajatu Rasayana
[^43]: Administration of Lashuna Rasayana
[^44]: Bhringaraja Rasayana
[^45]: Varahikanda Yoga
[^46]: Loha Rasayanam
[^47]: Thriphala Kalka Rasayana
[^48]: Purnarnava Rasayana
[^49]: Brahmi Swarasa Rasayana
[^50]: Vacha Ghrita Rasayana
to 2 ratti which is used for acute diseases. Also an increasing and decreasing pattern of dose along with the specific duration can be seen in this Kalpa prayoga similar to Vardhamana krama mentioned for Vardhamana pippali and Vardhamana bhallathaka rasayana. This observation suggests that the dose required for vyadhihara effect is lesser whereas the dose required for rasayana effect is higher. Movement of phyto constituents and micronutrients of formulations from one dhatu to other dhatu can be achieved by higher dose of medicaments. This particular increasing order along with a specified duration followed to administer the higher dose of the particular drugs makes the body ready to tolerate the excessive dose of the same drug gradually than causing harm by administering in single higher dose. The gradual decrease also helps the body not to cause any dependency or withdrawal effects.

Apart from the dose, the duration of administration of rasayana drugs also plays a key role in deciding its efficacy and target benefit. Bhringaraja, Sweta avalguja beeja, Varahi kanda yoga, etc. can be beneficial as rasayana by usage of period for a month. Increase in duration has results at different levels in the body. It can be inferred that the medicines when given till the vitiation of dosha and dushya comes to normalcy the vyadhihara effect is seen and to achieve rasayana effect the formulations need to be taken continuously for prolonged duration. Further the prolonged intake allows the therapeutic potentials of the formulations to attain cumulative effect. When the accumulation reaches a particular level inside the body tissues, it starts stimulating various organs, srotas, tissues or other physiological parameters to accustom themselves to pathogenic stimulus.

Prime importance is given for the bala of the person while administering rasayana. As in the references of many rasayana, different doses are mentioned according to the bala of the person. Also without interfering the daily meals eg: Brahma rasayana, Chyavana prasha. This definitely implies the importance of the dose of formulation for rasayana. The dose can be varied according to an individual’s digestive capacity.

CONCLUSION
A number of single herbal, mineral and metal drugs possess rasayana property and also numerous formulations have been considered as rasayana. Dose with which the rasayana are administered are an important factor which decide the efficacy. In this review it was observed that dose is specified for few of the rasayana but for
many no specific dose is mentioned in *phalasruthi*. Administration of *rasayana* in specific order and use of higher dose of drugs in this context suggests the importance of dose in achieving desired results from *rasayana*. A lead has to be taken from instances of *Shilajatu rasayana*, *Vardhamana pippali/ bhallataka*, *Parpati kalpa* which emphasizes the importance of the dose in particular to *rasayana* action rather than a *vyadhihara* (curative) action. This suggests that the dose of the *rasayana yogas* need to be validated rather than considering the dose mentioned for these yogas as per *kalpana*. 
REFERENCES