KUPIPAKWA RASAYANA- AN EXPLORATION OF THE CLASSICS

Sushmitha V S¹, Seema MB², Radhika Ranjan Geethesh P³, Prabhakara Upadhyaya Renjal⁴

¹PG scholar, ²Associate Professor, ³Professor; HOD; Dept. of PG Studies in Rasashastra and Bhaishajyakalpana, SDM College of Ayurveda, Udupi, Karnataka, India; ²Associate Professor, Uttarakhand Ayurved University, Main Campus, Ayurveda Branch, Harrawala, Dehradun, Uttarakhand – 248001, India

Email: sushvs317@gmail.com

ABSTRACT

_Bheshaja_ is an important factor among the _Chikitsachatushpada_. _Rasaushadhis_ are the medicines of metallic and mineral origin. Smaller dose and quicker action of these medicines makes them more acceptable than drugs of herbal origin. _Kupipakwa Rasa Yogas_ being one of the _Moorchanayogas_ of _Parada_ has wide range of references in the texts of _Rasashastra_. The variations are appreciated in terms of different materials and equipments utilised during the preparation of _Kupipakwa Rasayana_. The first reference of _Kupipakwa Rasayana_ is found in _Rasa Prakash_ of _Sudhakara_ of Acharya Yashodhara of 12th century. Other relevant references are collected from different _Rasagranthas_. Recently, adaptations of modified techniques are seen pertaining to the large scale preparation of _Kupipakwa Rasayana_. The differences in the materials and probability of their utility is analysed and a conclusion is derived considering their acceptance in the current era which would likely not compromise the efficacy of the product.

Keywords: Rasaushadhi; Moorchana; Kupipakwa Rasayana; Koopi; Valukayantra

INTRODUCTION

_Bheshaja_ has been placed in second order among the four factors of treatment. Among them _Rasaushadhis_ are considered as the best when compared to the drugs of herbal origin in imparting health to the individual. Smaller dose, palatability and quicker action are the advantages of _Rasaushadhis_ compared to other treatment modalities. Among the metallic drugs, _Parada_ which is believed to be of divine origin is given utmost importance that the whole branch is named after it. It is such a drug that when administered after _Moorchana_ cures the diseases¹. As this cannot be ingested alone, _Moorchana_ has been mentioned in our classics which impart a definite property of curing the ailments². _Moorchana of Parada_ can be classified as _Kharaleeya_, _Parpati_, _Kupipakwa_ and _Pottali Rasayana_. Among them _Kupipakwa Yogas_ are one such _Paradakalpas_ which are widely used in the current era. The medicines prepared from _Parada_ (Mercury) and other compounds in a glass bottle, by applying heat through _Valuka Yantra_ is termed as _Kupipakwa Rasayana_. It is a
Saghimoorchana of Parada. The references regarding the Kupipakwa Rasayana varies according to different Rasagranyhatas when concerned to the use of container, nature of the cloth, its thickness, Agni, its duration etc. Hence an attempt is made to summarise these details based on the references available in the texts of Rasashastra.

Review of literature
The first reference of Kupipakwa Rasayana is found in Rasa Prakasha Sudhakara of Acharya Yashodhara in 12th century where the formulation is named as Udayabhaskara Rasa in the context of Rasabhasma. The word Ghana rasa is used for Rasakapoora. By 13th century, various Kupipakwa formulations were in practice like Sarvalokashraya Rasa, Mehari Rasa, Sarvanga Sundara Rasa etc. which are stated in Utharardha of Rasa Ratna Samucchaya. Rasa Koamudi, pertaining to 16th century and Ayurveda Prakasha of 7th century has mentioned Sindura Rasa instead of the word Rasa Sindhoo. In Rasendra Chintamani the author has not only mentioned the method of Anthardhuma and Bahirdhuma Kupipakwa Vidhi but also explained yogas like Rasakarpura, Agnikumara Rasa, Vangeshwara Rasa, Lauhasundara Rasa etc. Many Kupipakwa formulations are described in Rasatarangini. More than 250 Kupipakwa Yogas are described by Shri Harishharananandji in his book Kupipakwa Rasa Nirmana Vignana.

The term Kupipakwa Rasayana comprises 3 terms; Kupi, Pakwa and Rasayana, which means that the Rasayanans prepared in Kupi by subjecting it to heat. Kupipakwa Rasayana can be classified into Sagandha and Nirgandha based on the presence and absence of Gandhaka, Kantastha and Talastha according to site of collection of the product or Anthardhuma and Bahirdhuma based on the method of preparation. [Table No.1]

Koopi:
It should be made of any of these materials- Kaacha, Mrittika, Hema, Ayas, Taara. In Rasendra Chintamani containers of different materials like mud, iron, gold, silver and glass are mentioned.

Several names have been quoted for container in different classical texts which are as follows: Ruchira Kachaghati [Rasa Prakasha Sudhakara, Rasayogasagara, Rasendra Sara Sangraha, Rasakamadhenu], Kachakoopi [Brihat Rasarajya Sundara, Rasatarangini, Rasamritha, Rasayogasagara, Rasendra Sara Sangraha, Ayurveda Sara Sangraha, Rasakamadhenu, Rasakaumudi, Rasendra Chudamani], Kachakumbha [Rasamritha, Rasakamadhenu], Kachamayaghata [Rasakamadhenu], Kuppika [Rasakamadhenu], Kupi [Brihat Rasarajya Sundara, Rasakamadhenu], Kachabhajana [Rasakamadhenu], Koopika [Rasakamadhenu], Koopi [Siddha Bheshaja Mani Mala], Goodavakra Kachakalasha [Rasa Ratna Samucchaya], Deerghanaaladridakoopi [Rasendra Chintamani], Krishnakoopi [Ayurveda Sara Sangraha], Strong Kachakoopi which is neither too short nor too long [Rasa Chandamshu].

Selection of mud for applying on the container:
It should be black in colour, sticky, soft without any stones. If such mud is not available then one can use yellow coloured mud. The mud should have the ability to withstand high temperature. In Kupipakwa Rasa Nirmana Vijnana the author also explains the preparation of mud which can be used for application on the Koopi- husk 2 parts, pieces of cloth 1 part and 3 parts of mud is taken and triturated by adding water. Equal quantity of human hair is added and pounded till it attains waxy consistency. This should not be allowed to dry. It should be left in a wet state till 7 days. In Rasakamadhenu we find the use of Vajra mrit for the application on the container. In Ayurveda Prakasha the mud is prepared using 1 part of Saindhavalavana, ½ part of Loha Churna, ½ part of Khatika Churna, quantity sufficient water which are made into a thin paste and is applied over Koopi. The author of Rasakamadhenu emphasizes the use of Hatamrittika for the same. Mritastra which is 1 Angula thick is applied on Koopi and dried. In Rasendra Chintamani, Keelaalaayaha Kritha Lepa
prepared using Lohachurna and Jala with excessive khatika and lavana is intended for Koopidridheekarana.\textsuperscript{14} Mrithkarpata is stated for the purpose in Rasamritha, Rasendra Sara Sangraha and Rasakamadhenu. Mridvastra is mentioned for the same in Rasayogasagara, Rasendra Sara Sangraha and Ayurveda Sara Sangraha where as the use of Pata is stated in Rasakaumudi. The authors of Rasakamadhenu and Rasatarangini mention the use of Mrittikalipthaambara and Jalatoolamritthika respectively. According to Rasayanasara 1\textsuperscript{st} and 4\textsuperscript{th} layer should be done by applying Madhu. Seven layers are applied over the container and dried\textsuperscript{15} Once the mud over the container dries 1/3\textsuperscript{rd} or 1/4\textsuperscript{th}\textsuperscript{17} of koopi is filled with drug.

**Valukayantra**

The word Valukayantra has been commonly used by most of the authors. It is also known as Sikathayantra / Kawachiyantra. Various materials are described in the classics for the preparation of Valukayantra like Mrithpatra according to Rasayanasara, Bhanda which is 1 Vitasthi deep,\textsuperscript{18,19} Bhanda, which has the capacity of 5 Aadaka Valuka\textsuperscript{20} with Chidra at its bottom [Rasamrita, Rasendra Chudamani and Rasa Chandamshu], Subhande- Sachidramritthsthal [Rasendra Sara Sangraha], Banda [Rasakamadhenu], Mriththilipthasthali [Rasatarangini ], Yantra made of iron / mud [Paradavijnaneeyam] and Loha or Mrithbhanda, Adah Saikathayantra\textsuperscript{21}. The measurement of hole at the bottom is Tarjanyangulapramana as per Rasendra Chintamani where as 2-3 Angula according to Rasa Darpana. Most of the authors have mentioned Kramagni for the preparation of Kupipakwa Rasayana. According to Rasa Ratna Sammuechaya heat should be given to such an extent that the grass placed on the Valuka gets burnt at the end of application of Mridu, Madhyama and Teevragini\textsuperscript{22}. The use of Manda-Madhya-Khara is advised in Rasendra Sara Sangraha. In Rasa Chandamshu Teevragini is advised for the preparation of Sameerapannaga rasa. In the context of Haragauri Rasa, Manda-Madhy- Hatagni is mentioned\textsuperscript{23}. Even though we find the use of Mridu- Manda- Teevragini in Ayurveda Sara Sangraha, unlike Rasa Sindoora Mridu, Madhyama and Teevragini should not be given for the preparation of Rasakarpooora, where the author specifies the use of only Mandagni. For the preparation of Sameerapannaga rasa, Swarna Vanga and Swarnabhooapatirasa Madhyamagni is advised\textsuperscript{24}. Mridu- Madhyama- Uttamagni is mentioned in Rasayogasagara where as Teevragini is advised for Shilasindoora\textsuperscript{25}. Sources of heat vary according to different classics like Chaagavit [Rasakamadhenu], Vanopala [Rasatarangini, Ayurveda Sara Sangraha] etc. Corking materials like Pashanakhatika\textsuperscript{26}, Khadiya or Khatika is used and after corks a layer of mud smeared cloth is covered over the cork\textsuperscript{27}. Multhanimitti or jaggery and lime or lime mixed with jaggery or honey or piece of brick or 4 folded cloth which is smeared with mud should be tied over the cork using thread and upon the thread mud paste is applied and dried.\textsuperscript{28} Rasagolaadi\textsuperscript{29}, Kajjali powder, Tamra pieces in case of Tamrasindoor\textsuperscript{30} are the different forms of drug which are placed inside the container. For clearing the neck of the Koopii Tapta Lohashalaka\textsuperscript{21}, Taptha Ayas Shalaka\textsuperscript{32} are advised. For assuring the time of corksing the bottle testing with Sheeta Shalaka is mentioned in Paradavijnaneeyam.

**Poorva karma:**

It includes arrangements for the preparation of Kupipakwa Rasayana. The instruments like weighing machine, mortar- pestle, vessel, bottle, cloth, mud, pyrometer, pot, sand, copper sheet, iron rod and firewood are collected. Strong glass bottle which is neither too long nor too short should be taken. It should be covered with mud smeared cloth and dried under sunlight. Such seven layers should be made. The main drug and the drugs used for levigation are collected. Swarasa or Kashaya of the Bhavanadravya which is mentioned for specific
formulation has to be prepared. Then levigation is carried to the main drug. The drug has to be filled up to 1/3rd quantity of the bottle. Initially sand has to be filled inside the Valuka Yantra upto a level of 1 Angula from the bottom of Valuka Yantra, bottle is placed and remaining sand is filled upto the neck of the Koopi. It is then subjected for heating.

**Pradhana karma**
Initially low heat should be given. As the procedure continues heat should be increased gradually i.e., Kramagni should be given. Gandhaka which collects at the neck of bottle should be cleared using hot iron rod.

**Aushadhipakapareeksha**:  
- Sunset colour is seen at the bottom of the bottle.  
- When cold rod is inserted upto the bottom of the bottle, Nirdhuma is seen.  
- When thin sheet of copper is placed on the mouth of the bottle the particles of Mercury adheres on it.

Once the Paka of Oushadha occurs mouth of the Koopi should be closed in Bahirdhooma method. In the preparation of Antardhuma method corking has to be done immediately after filling the drug, when Dhooma appears, cork is removed and Lohashalaka has to be inserted till the bottom, moved around and removed to check for the presence of moisture. According to Rasamritha heating has to be continued further in Teevragni as per the duration prescribed in respective formulations. Sand near the neck of bottle is cleared. The desired Agnikala varies according to preparations.

**Paschat karma**-
After the application of high temperature, heating is stopped and it is allowed to cool on its own. The procedure is known as Swaanga Sheetala. Bahisheetala is mentioned in the context of Swarna Vanga. Once it gets cooled on its own [Rasamritha, Rasendra Sara Sangraha, Rasakaumudi, Rasakamadhenu, Rasayogasagara, Ayurveda Sara Sangraha] the container has to be removed by separating the sand around it. The layer of mud should be cleaned carefully. At the centre of the glass bottle a kerosene dipped thread should be tied below/ above the level of product collected and burnt. Water is sprinkled and bottle is broken or it should be wrapped immediately in a wet cloth. The bottle breaks at the site of the thread with a distinct sound. The product is collected, weighed and stored.

**DISCUSSION**
Kupipakwa Rasayanas are the unique Murchana Yogas of Parada. The formulations are prepared in glass bottle with the aid of Valukayantra. Though classics mention containers of different material, glass bottles are preferred these days owing to its easy availability and handling. The materials of containers like Hema, Tara which are mentioned in the classics may not sustain the temperature during the procedure. The neck of the bottle should be long enough to provide sufficient area for the collection of product. Heat-resistant glasses are believed to be better than any other ordinary glass available. It has been tested to withstand temperature changes of up to 1000°C. To make it more heat stable 7 layers of mud smeared cloth is applied. Multhanimitti (fuller’s earth) is preferred for application as it is soft and easily spreadable. One can also use black soil for the purpose as it becomes sticky when treated with water. But once the soil dries, it develops cracks. This can be overcome by smearing it on the cloth and then applying it on the bottle. It is then placed in Valukayantra where the sand is filled up to the neck of the Koopi. Valukayantra made of iron can be preferred as the specific heat capacity and heat retention is high compared to mud. Sand can retain heat for very long period as the heat transfer coefficient is very low. These may prevent the abrupt heat variation thereby promoting gradual heating. Currently the vertical muffle furnaces are commonly used for the preparation of Kupipakwa Rasayana owing to its benefits over the classical sources of heating and maintenance of temperature. It also prevents the exposure to the products of combustion during the procedure. But, the use of electricity renders high cost of the product which can
be a disadvantage in the part of vertical muffle furnace. Generally for the preparation Mridu, Madhyama and Teekshaagni that is Kramagni is the pattern followed. For the preparations containing Gandhaka and Parada as ingredients the melting of Kajjali and onset of sulphur fumes can be considered as Mriduagni. The stage where there is a profuse fume, blocking of neck of the Koopi with sulphur and liquefaction of Kajjali can be considered as Madhyamagni. The absence of flame indicates the absence of free sulphur. This can be tested by insertion of red hot iron rod into the bottle. When there is no free sulphur, mercury starts escaping from the bottle which can be appreciated as silvery particles moving in spiral manner out of the bottle. This can be tested by placing a copper sheet on the mouth of the Koopi. Once the test is positive corking is done and Teevragni is given for desired period. The cessation of flame, appearance of red colour at the bottom of the bottle can be considered as the time for corking the bottle. For corking the Koopi one can use wood covered with mud smeared cloth as it is easily available and economical. The corking material thus used should be inert. The duration of heating differs according to the formulation. Once the Teevragni is provided the sand near the neck of the bottle is removed to provide comparatively cooler area for condensation. It is then allowed for Swangasheetala. Before breaking the bottle for collection of the product one should check for the site of collection of the product. In Ayurveda Sara Sangraha, the author explains the sprinkling of water at the site where the thread is burnt, but practically it is feasible to burn the thread and wrap it immediately with wet cloth. During breaking of bottle, the bottle breaks along the line of thread which could be due to abrupt change in the temperature. The product is then collected by gently tapping the bottle. Care should be taken to avoid mixture of glass pieces. It is then stored.

**CONCLUSION**

The Rasaushadhis are well known for their rapid action and are supposed to be superior to other drugs. Hence, Rasashastra has a unique importance in the field of Ayurveda. The Rasa preparations can be categorised as Kharaleeya Parpati, Pottali and Kupipakva Rasayana. The compounds prepared from Parada or other compounds in glass bottle by applying heat are termed as Kupipakwa Rasayana which requires special type of container preferably glass bottle), Bhrasthri and Valukayantra (Specially constructed instrument). It also has certain procedures like maintaining Kramagni (Specific heating pattern), Shalakasanchalana (Insertion of hot and cold rod during preparation) Mukhabandhana (Corking of a bottle), Swangasheetikarana (cooling on its own), Kupilbedana. (Breaking the glass bottle) and collection of product. On evaluating different texts variations with respect to container, mud for smearing, Valukyantra, pattern of heat, source of heat, corking material, accessory instruments etc were noticed. Due to the advancement of technology there has been a modification in the manufacturing techniques in the current era. Hence the selection of the materials for the preparation should be made such that they should not compromise the efficacy of the final product.

**Table 1: Types of Kupipakwa Rasayana**

<table>
<thead>
<tr>
<th>Presence/absence of Gandhaka</th>
<th>Site of collection of product</th>
<th>Method of preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sagandha</td>
<td>Kantastha</td>
<td>Antardhuma</td>
</tr>
<tr>
<td>Nirgandha</td>
<td>Talastha</td>
<td>Bahirdhuma</td>
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</tbody>
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