Review on Parad Dosha and its Shodhana

Vani Gayathri P.A1, Manisha Goyal2, Govind Shay Shukla3, Rajaram Agarwal4

1-PG Scholar, PG Department of Rasa Shastra and Bhaishajya Kalpana, Dr. Sarvepalli Radhakrishnan Rajasthan Ayurved University, UPGIAS &R, Jodhpur.
2-Assistant Professor, PG Department of Rasa Shastra and Bhaishajya Kalpana, Dr. Sarvepalli Radhakrishnan Rajasthan Ayurved University, UPGIAS &R, Jodhpur.
3-HOD & Professor, PG Department of Rasa Shastra and Bhaishajya Kalpana, Dr. Sarvepalli Radhakrishnan Rajasthan Ayurved University, UPGIAS &R, Jodhpur.
4.-Associate Professor, PG Department of Rasa Shastra and Bhaishajya Kalpana, Dr. Sarvepalli Radhakrishnan Rajasthan Ayurved University, UPGIAS &R, Jodhpur.

ABSTRACT:
Rasa shastra has given an auspicious position to Parada as it has been considered as the physical essence of Lord Shiva. Vedas also consider Parada as a gift of nature. The classical test Rasaratna Samucchaya states that “Siddhae rase Karishyami Nirdraaridrayam agadam jagat” exposes the magical effect of Parada. Even though, administration of Asudha Parada causes severe illness than that of poison. As it is associated with a lot of impurities, it is advised to do both Samanya Shodhana, and Visesha Shodhana (general and specific purificatory methods before its internal administration. Otherwise these impurities may cause various toxic effects in body ranging from mild fever to death. Hence Rasa acharyas mentioned a number of purificatory procedures both general and specific to eliminate the doshas associated with Parada. As per modern science Mercury comes in three forms (Elemental, inorganic and organic), each with its own set of symptoms. The brain is the primary target organ for breathed mercury vapor, whereas mercurous and mercuric salts harm the gut lining and kidneys, confirming persistent exposure and methyl mercury are widely disseminated throughout the body. This article focuses on various doshas associated with Parada and its purificatory procedures.

Keywords- Parada Doshas, Samanya-Vishesha Shodhana

INTRODUCTION
Rasa shastra, the iatrochemistry of Ayurveda is mainly explores the utilization of metals and minerals for therapeutic purposes. Even though, one can easily see the extra ordinary importance given to the Parada/Rasa, as the whole branch itself named as Rasa shastra, the mercurial science. Rasa shastra has given an auspicious position to Parada as it has been considered as the physical essence of Lord Shiva. Also, as it has the property of swallowing other metal, it is considered as the superior among all the metals and minerals. It not only has a spiritual & holistic significance, but has magical therapeutic effects also. Parad plays an important role in most of the rasousadhish
in one or another form. The quotation given in classical text Rasaratna Samuccayya that “Sidhe rase karishyami Nirdaari dyamagadam jagat” exposes the miraculous effect of Parada.

Even Parada has a number of wonderful properties, if one consumes Asudha Parada, it will cause severe illness than that of a poison as mercury is likely to be associated with various impurities. Hence acharyas explained certain purificatory process for Parada before its consumption. This article mainly focused on various parada doshas mentioned in different classical books along with the Shodhana procedure for general and specific impurities.

Parad Doshas

Even different rasa acharyas mentioned various doshas, most of them mainly mentioned 3 doshas namely-

(i) Naisargika,
(ii) Yougika
(iii) Oupadhika.

These are again divided into various subcategories as shown in the given flow chart(Fig. 1)

Other than these 12 doshas, acharya Madhava has mentioned eight types of Mahadoshas in his book Ayurved Prakash. They are Naga, Vanga, Mala, Yahni, Chapalya, Visha, Giri and Asahyagni.

1. Naisargika Doshas

The term Naisargika means natural. As mercury is a metal found in deeper surface of earth, it might be mixed with a number of natural impurities. These Naisargika doshas are further divided into many, varies from 3-10 according to different acharyas. But most of the classics mentioned the three – Visha, Vahni, and Mala as the Naisargika Doshas.

Table .1 Showing Naisargika doshas as per different acharyas

2. Yougika Doshas

The Sanskrit term Yougika refers combination. All the rasa classics mentioned mainly two Yougikadoshas named Naga and Vanga except Rasamangalam & Anandakanda. In the text Rasamangalam these are mentioned under the third category- Oupadhikadoshas and while the author of Anankanda added Visha in Yougikadosha along with above two. Acharyas also mentioned the health hazards caused by these impurities as Jadhya, Adhmana and Kushtha.

These are mainly added for trading purpose. These metals are easily melted even at very low temperature and get mixed with Parada and these metals are heavy in weight. Thus it increases the weight of Parad and help in marketing for hike the rate.

3. Aupadhika Doshas

Aupadhika dosha also known as Kanchuka dosha, which means covering. Acharya Sadanand Misra, the author of RasaTarangini, explained about the occurrence of these doshas in very well manner that due to the oxidation process, a grayish coloured layer appears on the surface of the mercury. Consumption or exposure of parada having these doshas may results severe adverse effects as given in the table

Table no.2 Showing adverse effects of Aupadhika/ Kanchuka dosha Anandakandakaraka coined different names like Kalika, Malini, Kapoti, RaktaKanchuka, salomi, Girija, Pindali for Kanchuka doshas.

Mercurial toxicity – Modern aspect

Nowadays the finer information and the mechanism of the actions of mercury toxicity are known with the progress of technology and science. The term Mercurial’s refers poisoning due to ingestion or inhalation of mercury or its compounds. It may be acute or chronic.

Signs and symptoms (Acute poisoning)

Mercury comes in three forms (Elemental, inorganic and organic), each with its own set of symptoms. The brain is the primary target organ for breathed mercury vapor, whereas mercurous and mercuric salts harm the gut lining and kidneys, confirming persistent exposure and methyl mercury are widely disseminated throughout the body.

1. Elemental (metallic) mercury is rapidly absorbed as a vapor through the lungs, reaching the bloodstream and entering the brain. The clinical picture can be split into three phases: the first phase, which is characterized by metal fume fever, the intermediate phase, which is characterized by severe multiorgan symptoms, and the late phase, which is characterized by only CNS symptoms. Headache, nausea, and cough are all symptoms of inhalation.

2. Ingestion of inorganic mercuric salts causes mucosal necrosis and widespread precipitation of intestinal mucosal proteins, culminating in hemorrhagic gastroenteritis and substantial fluid loss, terminating in shock. If the patient lives, he or she may develop acute renal failure.

3. Aryl, short- and long-chain alkyl compounds are the three different types of organic compounds. Because of their inherent qualities, such as lipid solubility, organic salts are better absorbed from the GIT than inorganic salts. Since it can accumulate in the brain and breach the blood-brain barrier, the CNS effects are more pronounced. In contrast, the kidney serves as the body's primary repository for inorganic substances.
Systemic signs and symptoms
a) GIT Metallic taste, voice hoarseness, feeling of throat constriction Mucous membrane of mouth, tongue appears in grayish white. Hot burning pain extends from mouth to stomach. Diarrhea with blood stains.
b) Renal –Oliguria and hematuria
c) CVS – Difficulty in breathing, hypertension

3. Acute exposures to organic mercury have a one- to two-week latency period. Symptoms involve the CNS, like visual field constriction, hearing loss, tremors etc.

Fatal dose:
*Mercuric chloride : 30-50 mg/kg
*Methyl mercury : 10-60 mg/kg
* Mercury vapor :10 mg/m³

Fatal Period: 3-5 days

Chronic Mercury Poisoning –Hydargyrism

Signs & Symptoms
- Mercury vapor inhalation causes a triad of symptoms including tremors, neuropsychiatric abnormalities, and gingivo-stomatitis.
- Anorexia, insomnia, abnormal sweating, headache, lassitude, increased excitability, tremors, gingivitis, hyper salivation, loosening of teeth with blue line in the gum, jaundice, increased urination, personality changes, and memory and intellectual deterioration are all symptoms of chronic inorganic mercury poisoning.
- Chronic exposure can cause glomerular and tubular damage. Mercury vapor inhalation causes a triad of symptoms including tremors, neuropsychiatric abnormalities, and gingivo-stomatitis.
- The effects of continuous exposure to organic mercury are: tremors, dysarthria, visual field constriction, deafness, impairment of memory and coordination.

Parada Shodhana

Shodhana
In rasa shastra, drugs cannot take for the therapeutic purpose without purification Mercury is no exception. As it is associated with a lot of impurities, it is advised to do both Samanya Shodhana, and Visesha Shodhana (general and specific purificatory methods before its internal administration. Otherwise these impurities may cause various toxic effects in body ranging from mild fever to death. The different methods Of Parada Shodhana are explained.

Parada Samanya Shodhana.
Samanya Shodhana of Parada is essential for the elimination of Naisargika and Kanchukadosha. As per RasaTarangini, the properties of Shuddha Parada is similar to that of Piyusha(nectar).So Rasa Vaidya should do purification of Parada before its administration.

Quantity of Parada for Shodhana
In Rasa Ratna Samuccchaya, the quantity of Parada to be taken for its purificatory process is mentioned. According to that, for Shodhana and Samskara, Parada should be taken from 2000 Pala, 1000Pala, 100Pala, 50Pala,28 Pala,10 Pala,5Pala to1/2 Pala. While as per RasaTarangini, the quantity should be taken from 100 to 1Pala. Which indicates, one should not take less than ½ Pala Parada for purification.

Various procedures for Parad Shodhana are mentioned in different classics as explained below

‘1st Method’

Requirements
1.Parada-1part
2.Sudhachurna-1part
3.Garlic-1part
4.SaindhavLavan-1/2part
5.Warm water- As required.

Equal quantity of Asudha Parada and Sudha Churna(lime powder) was added to a khalwa yantra, and mardan was done for 8 hours for 3 days. By the end of mardan, visible Mercury collected and filtered through four folded cloth and the remaining mercury which got merged with lime powder, collected back by Urdhwapatan procedure, using damaru yantra.Parad was then washed with warmwater and kept for further processing .Lime purified Parad was further triturated with equal quantity of lashun Kalka and half quantity of Saindhav lavan till it obtain blackish colour. Now this black colour, mixture is again washed with warm water until, clear, purified Parada obtained

2nd Method

Required quantity of Parad taken along with Ghrita kumari swaras, Chitrak mula twak and Rakta sarshap (each of 1/16 part of Parad) taken in a khalwa yantra. This mixture further triturated with Brihati kwath and Triphala kwath for 3 days. At the end, this mixture is washed with warm water to obtain pure Parad free from Sapat Kanchuka Dosha

3rd Method

Appropriate quantity of Parad and equal quantity of Sudha churna was taken in a clean khalwa yantra and triturated for 7 days continuously. By the end of trituration process, Parad globules get disappeared into lime powder partially. Then, visible mercury collected from mixture washed using warm water and kept separately.
collected mercury taken again in khalwayantra, added with Grihadhuma, Haridra churna and Ishitika churna(each 1/16 part of Parad). This is to be triturated for 3 days continuously. 

Later, the above mixture is washed carefully with Kanji and filtered through four folded cloth to obtain pure mercury. This Parad will be free from Sapta Kanchuka dosha.

4th Method

Required amount of Mercury is taken in a khalwa yantra. It is triturated withSwara of Nagavalli and Ardraka. Further mixed with three types of Kshara (Sarja Kshara, Yava Kshara, Tankan, each 1/16 part). The mixture triturated for 3 days and later washed with either warm water or with Kanji. This mercury will be free from Sapta Kanchuka doshas and shines like pure pearl.

5th Method

Required quantity of Parada is taken and is added with Trikatu churna, Guda, Yavani churna, Panchalavana (Souvarchala, Saindhava, Bida, Samudra and Audbhida), Chitrak mula churna, Triphala churna, Ksharatraya (Sarja Kshara, Yava Kshara and Tankan Kshara), Sarshapbija and Dattura bija. The quantity of each ingredient should be 1/20 of Parada.

According to Ayurveda Prakash

Asudha Parad is triturated with equal quantity of Lasuna Kalka and Saindhava lavana for 7 days. Next day the mercury which collected from the above mixture, washed with warm water and thus obtained Sudha parada.

Parad Visesha Shodhana

Table no.3 Enlisted the drugs for Parada Visesha Shodhana as per Rasa Tarangini

Table no. 4. Enlisted specific drugs for removing the specific impurities as per Ayurveda Prakash

DISCUSSION

Parada, the super important inorganic metal has fascinating people for hundreds of years by its action and properties. Even though it is less using for therapeutics comparing to herbal drugs as it is a heavy metal. The hazardous effect causing by Parada are due to administration of impure mercury. But various purification methods are mentioned by our acharyas to improve the therapeutical efficiency by eliminating the impurities involved.

Even though purified, distilled form of mercury is available nowadays; there is a need of doing the classical Shodhana procedures because as these procedures are done with various herbal drugs like Triphala, Haridra churna etc, it results in enhancing the therapeutic effects by reducing its toxicity. Also a material's physico-chemical alteration aids in increasing its biological availability, i.e., potentiating its biological efficacy on the human body. Lowered particle size aids absorption; smoothness leads to non-irritability; chemical alterations render the substance analogous to tissue cells; toxicity is reduced; and cell acceptance is raised.

Role of Mardan in purification: All the method mentioned in this article is done based on the principal of Mardan. The science behind this is, the heat produced by the friction between mortar and pestle would seize the non-heat resistant impurities. Rise in temperature also accelerates enzyme reaction but at the same time high temperature results enzyme inactivation. Hence, optimum temperature should be maintained by uniform mardan procedure.

Amongst various Shodhana methods mentioned here, the one with lashun swaras considered as ideal, which is an aboard of sulphur. This sulphur combines with mercury forms a best co-valent bond. As a result, triturated product turns to black amalgam. It is a miniature concept of Kajjali. The chemical reaction behind other purificatory methods is not unveiled yet.

CONCLUSION

Mercury, as it is obtained from the crust of earth, it may mixed with a number of physical and chemical impurities naturally. So it is mandatory to perform its purification before administration. This article concisely explained about various Parada dosha and the method of Parad Shodhana as per different classical text books including Rasa Tarangini, Ayurveda Prakash, and Rasaratna Samucchaya etc.

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ORCID

Vani Gayathri P.A, https://orcid.org/0000-0002-4145-4207

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Fig. 1. Showing subdivisions of Parad doshas.
Table 1: Showing Naisargika doshas as per different acharyas

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Table 2: Showing adverse effects of Aupadhika/ Kanchuka dosha

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<tr>
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<th>Effect on human body after consumption of Parada with this Dosha</th>
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<tbody>
<tr>
<td>1.</td>
<td>Bhumija – Parpati</td>
<td>Cause dryness to the whole body by absorbing the liquid content from the tissues</td>
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<tr>
<td>2.</td>
<td>Girija- Patini</td>
<td>Cracked skin</td>
</tr>
<tr>
<td>3.</td>
<td>Varija- Bhedi</td>
<td>Results severe malabheda</td>
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<tr>
<td>4.</td>
<td>Nagaja- Dravi</td>
<td>Causes liquefaction of bodily tissues by keeping more water within the tissues.</td>
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<tr>
<td>5.</td>
<td>Nagaja- Malakari</td>
<td>Aggravates tridoshas</td>
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<td>6.</td>
<td>Vangaja- Andhakari</td>
<td>Results blindness.</td>
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<td>7.</td>
<td>Vangaja- Dhwankshi</td>
<td>Hoarseness of voice and blackish skin discoloration</td>
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</table>
Table no.3 Enlisted the drugs for *Parada Visesha Shodhana* as per *Rasa Tarangini*\(^\text{18}\)

<table>
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<tr>
<th>S.N</th>
<th>Drugs added</th>
<th>To purify</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td><em>Grihadhuma, Ishtika churna, Haridra churna</em> and ash of finely cut wool of sheep</td>
<td><em>Naga Dosha</em></td>
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<td>2</td>
<td><em>Indrayana, Ankola and Haridra churna</em></td>
<td><em>Vanga Dosha</em></td>
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<td><em>Chitraka mula churna</em></td>
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<td><em>Krishna Dattura panchanga or bija churna</em></td>
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<td><em>Triphala churna</em></td>
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<td><em>Gokshura churna</em></td>
<td><em>Asahyagni Dosha</em></td>
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Table no. 4. Enlisted specific drugs for removing the specific impurities as per *Ayurveda Prakasha*\(^\text{19}\)

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<th>Drugs used</th>
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<td>1</td>
<td><em>Aragwadha mula</em></td>
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<tr>
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