

Available online on 15.10.2018 at <http://jddtonline.info>

Journal of Drug Delivery and Therapeutics

Open Access to Pharmaceutical and Medical Research

© 2011-18, publisher and licensee JDDT, This is an Open Access article which permits unrestricted non-commercial use, provided the original work is properly cited

Open  Access

Review Article

CONCEPT OF MARDANA: A REVIEW

Gazala Hussain, Govinda Sharma K

SDM College of Ayurveda & Hospital, Hassan, Karnataka 573201, India

ABSTRACT

Rasashastra is a branch of Ayurveda pharmaceuticals that deals with preparation of formulations using mineral, metals, marine drugs, gemstones, etc. It is a branch that has mercury as its center. Many processing types have been mentioned in Indian alchemy, most of the processes mentioned are for making Parada develop lohavada and dehavada property. There are also procedures and samskaras mentioned to potentiate the formulations or drugs. One such samskara (process) is mardana samskara that is used as a purification procedure of Parada as well as a bhavana for preparing Khalviya yogas (preparation made in mortar and pestle).

Keywords: Rasashastra, Mardana, shodhana, processes



Article Info: Received 21 Aug, 2018; Review Completed 24 Sep 2018; Accepted 25 Sep 2018; Available online 15 Oct 2018

Cite this article as: Hussain G, Govinda Sharma K, Concept of Mardana: a review, Journal of Drug Delivery and Therapeutics. 2018; 8(5-s):25-27 **DOI:** <http://dx.doi.org/10.22270/jddt.v8i5-s.1929>

INTRODUCTION

There are different processes of Parada (Mercury) mentioned in Ayurveda Pharmaceuticals specially in context of Indian alchemy for mineral and metallic drugs various samskaras (processes) are mentioned. One such samskara (process) is mardana samskara (process). A literary search through the texts of Rasashastra suggests the employment of the term mardana in different contexts.

The term mardana is used in the following areas of rasashastra:

1. As a procedure of general method of shodhana (purification) of Parada (mercury)
2. A samskara (process) of Parada- Mardana samskara (grinding process)
3. As a sub procedure for Patana samskara (distillation process), Utthapana samskara (processes of mercury)
4. Mardana done as a sub process for satvapata (extraction) procedure

Mardana as a bhavana (trituration) procedure to triturate the drugs with liquid medial like swarasa (juice), Kashaya (decoction), etc.

Shodhana of Parada: Parada (Mercury) is mixed with Sudha churna (lime) and grinded for three days, then it is sieved through a cloth and mixed with dehusked garlic and saindhava lavana (rock salt) and grinded till the paste turns black. Later it is washed with warm water or Kanji (sour rice gruel) and collected. ¹Thus mardana here is a procedure for purification of mercury.

Mardana samskara: It is a samskara (process) done as a part of ashtadasha samskaras of Parada (eighteen processes of Mercury). It is a second process of mercury, where mercury is grinded with Gruhadhuma (Chimney soot), Ishtika churna (brick powder), Rajjika (Brassica nigra), dagdha Una (burnt wool), etc. with water in a tapta khalwa yantra (hot iron mortar & pestle) for three days. ² The benefit of this samskara is the removal of the external impurities of Parada.

Mardana in other processes of Parada: Mardana samskara (grinding process) is carried out in Murchana samskara of parada where mercury is grinded with Kumari rasa, Triphala rasa and Chitraka mula rasa to remove the mala dosha, agni dosha and visha dosha of mercury respectively. ³

Mardana samskara (grinding process) is done as a sub process in Utthapana samskara (process of mercury) of Parada- the fourth samskara (process) of Mercury. Where the murchita parada is subjected to the process of mardana (grinding process) in Tapta khalwa yantra (hot

mortar and pestle) with hot water by which the kalka (paste) can be separated from mercury and as mercury is heavy, it will settle down at the base of the khalwa yantra (mortar and pestle) and the other impurities will float above with water or kanji (sour gruel) that can be separated.⁴

Mardana samskara (process) is done as a sub process in Patana samskara of Parada. In the fifth process of mercury termed as Tiryak patana samskara, the mercury is grinded with Dhanyabhraka (processed mica) and then subjected to distillation process in distillation apparatus. This is to remove the impurities from mercury.⁵

Marana of Mercury: Mercury is to be subjected to mardana with ankola rasa and then mixed with sulphur. This is kept in a musha (crucible) and heated after sealing the joints in Bhudhara yantra for twelve hours. This turns the mercury into ash form.⁶

Satvapatana: It is also done as a procedure of satvapatana, where the mineral drug from which the satva (metal) has to be extracted is grinded with other drugs herbal or mineral and then subjected to heat to extract the satva.

Mardana has been described for Abhraka satvapatana (extraction from mica), Vaikranta satvapatana (extraction from Tourmaline), Bhunaga satvapatana (extraction from earthworm), etc.

In Abhraka satvapatana (extraction from mica) mercury is mixed with Tankana (borax) and grinded with Musali rasa (*Chlorophytum borivillianum*) and a bolus is prepared and subjected to heat in koshti (furnace) to extract the satva (metal).⁷

Similarly for satvapatana of vaikranta (Tourmaline), Vaikranta is grinded with dravaka gana dravya and subjected to heat.⁸ For bhunaga satvapatana (extract from earthworm), it is grinded with bhringaraja juice (*Eclipta alba*) and subjected for further process.

Preparation of Khalviya Rasayoga: Mardana is taken similar like bhavana (trituration) process in the context of Khalviya rasayanas. Arogyavardhini rasa the term mardana is mentioned that the ingredients have to be mixed and grinded with Nimba (Azadirachta indica) juice for two days.⁹

In similar way for Sutashekhara rasa, mardana with bhringaraja juice (*Eclipta alba*)¹⁰, in Hrudayavarnava rasa mardana with Kakamachi rasa (*Solanum nigrum*) for a day, that is indicated in cardiac ailments,¹¹ in Ananda bhairava rasa mardana with Nimbu rasa (*Citrus limon*)¹² indicated in fever, etc. have been explained.

DISCUSSION

There is a quote mentioned as “mardanam guna vardhanam” that means the more mardana (grinding) is done the more guna (property) will imbibe in the drug. The process of grinding reduces the particle size that in turn will increase the surface area of the drug. The nirendriya Parada turns into sendriya by the addition of organic properties to mercury done in the process of

mardana or bhavana. A research article quotes that the mardana process has a significant role in the preparation of Arogyavardhini vati.¹³

Thus the benefits of mardana can be addressed as follows: In the context of mardana samskara (process) that comes under the asthadasha samskaras of parada (eighteen processes of Mercury), mardana is done to remove the external impurities of mercury. In satvapatana (extraction) process: Firstly, the process of grinding reduces the particle size. Secondly, it helps in uniform mixing of the drug.

In shodhana of Parada, mardana is done in tapta khalwa yantra (metallic hot mortar and pestle) thereby reducing the particle size and helping in the chemical processing of Parada (mercury). In Khalviya yogas too, mardana (grinding process) aids in reducing the particle size thereby increasing the surface area of the drug, it incorporates the medicinal properties of the bhavana dravya used like swarasa (herbal juice), etc. used for the preparation by which the therapeutic benefits of the preparation will be increased.

There stands a clear difference between mardana and Bhavana in a few contexts: Bhavana (trituration) is said to be done with a liquid media with the juice or decoction of herbal drugs, or any other media like water, milk, etc. till subhavita lakshanas (confirmatory tests of trituration) are attained¹⁴. Whereas, in mardana samskara (process of grinding), the use of liquid media is not specified strictly. In mardana, grinding of the drugs can be done with combination of two or more drugs like in the context of shodhana of Parada where mardana has been mentioned to be done with Parada (mercury) and Sudha churna (lime) for three days.

But, in the context of Khalviya yogas, the term mardana (grinding) is employed in similar way as bhavana (trituration) where trituration of the drug with herbal juices have been explained like in Arogyavardhini rasa, etc.

The common entity in both these processes is that the drug is subjected to grinding with or without the addition of any liquid media for the specified period of time. Thus it helps in reducing the particle size of the drug and also aiding in uniform mixing of the ingredients making it into a homogenous mixture.

CONCLUSION

Mardana is an important process in Rasashastra. It is the second samskara of the eighteen samskaras of mercury. The process of mardana is also done for the purification of mercury where it is grinded with herbal drugs to add organic constituents to mercury. Mardana is also done as a procedure for the patana and utthapana samskaras of mercury (the eighteen samskaras of mercury). Another context of mardana is for Khalviya yogas like Arogyavardhini rasa, Sutashekhara rasa, etc. where mardana is done with the juices or decoctions of herbal drugs to incorporate the properties of those drugs into the formulation to potentiate the formulation.

Conflict of Interest: No conflict of interest

REFERENCES

1. Sharma S, Rasa Tarangini. 11th Edition, Delhi: Motilal Banarasidas; 1979.pg. 79.
2. Kulkarni DA, Rasa Ratna Samucchaya. New Delhi: Meharchand Lakshmana Das Publication; 1998. p 209.
3. Sharma S, Rasa Tarangini. 11th Edition, Delhi: Motilal Banarasidas; 1979.pg. p 87.
4. Mishra G, Ayurveda Prakasha. 4th edition, Varanasi: Chowkhambha Bharati Academy; 1994. p 46.
5. Kulkarni DA, Rasa Ratna Samucchaya. New Delhi: Meharchand Lakshmana Das Publication; 1998. p 211.
6. Sharma S, Rasa Tarangini. 11th Edition, Delhi: Motilal Banarasidas; 1979.p. 157.
7. Kulkarni DA, Rasa Ratna Samucchaya. New Delhi: Meharchand Lakshmana Das Publication; 1998. p 23.
8. Mishra G, Ayurveda Prakasha. 4th edition, Varanasi: Chowkhambaha Sanskrit Samsthan p480.
9. Shastri A, Rasa Ratna Samucchaya. 8th Edition, New Delhi: Publication; 1998. p 400.
10. Sen GD, Bhaishajya Ratnavali. 14th Edition, Varanasi: Chaukhamba Sanskrit Samsthan; 2001.pg. 865.
11. Sen GD, Bhaishajya Ratnavali. 14th Edition, Varanasi: Chaukhamba Sanskrit Samsthan; 2001.pg. 489.
12. Sen GD, Bhaishajya Ratnavali. 14th Edition, Varanasi: Chaukhamba Sanskrit Samsthan; 2001.pg. 147.
13. Sapkota YR, Bedarkar P, Galib, Shukla VJ, Prajapati PK. An impact of Mardana- A comparative study on Arogyavardhini Rasa. J Phytopharmacol 2016; 5(6):242-247.
14. Sharma S, Rasa Tarangini. 11th Edition, Delhi: Motilal Banarasidas; 2000. 1979. p 21.

Journal of Drug Delivery & Therapeutics



JDDT