‘A PHARMACEUTICO-ANALYTICAL STUDY OF KHAGESWARA RASA AND CLINICAL EVALUATION OF ITS EFFICACY IN SWITRA (VITILIGO)’

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ABSTRACT

Ayurveda is the science of life and the oldest health care system, which is the basic foundation for the other systems of medicines. The holistic health care system of medicine has been taking care of people’s health since ancient period for achieving healthy mind and body. Rasa Shastra is the pharmaceutical branch of Ayurveda which deals with preparation of drugs using metals and minerals. Khageswara Rasa is one of the Sagandha, Saagni Antardhuma Kupipaka Rasayana described in Rasa Ratna Sammuchaya. It contains Shuddha Parada(Mercury), Shuddha Gandhaka (Sulphur) and Shuddha Kasisa (Green Vitriol) in equal proportions processed with Bhavana of Arjuna twak kwatha than preparation of small Balls like pellets from the Bhavita mixture. Finally these Balls are subjected to Kupipaka for one and half days (36 hours). Clinical trial was conducted to check therapeutic efficacy, following ‘Randomized Open-Labeled Clinical trial’ protocols. Khageswara Rasa provided statistically high significant (p<0.0001) relief on over all symptoms of Switra. Significant result on the symptoms likes Twaksheata, Twakrukshata, Daha, Colour, and Hb% and show not significant result on symptoms likes Kandu, Romavivarnata, and Margin.

KEYWORD: Khageswara Rasa, Antherdhuma, Kupipaka rasayana, Swita etc.

INTRODUCTION

Ayurveda, the Indian system of medicine uses drugs from three main sources i.e. plant, animal and mineral. Out of which Rasa Shastra is the pharmaceutical branch of Ayurveda...
which deals with preparation of drugs using metals and minerals. Several specialized pharmaceutical procedures like Shodhana, Jarana, Marana, Murchchana are adopted for these mineral materials to convert them into safe, nontoxic and efficacious forms. The Rasa aushadhis are highly potent, fast acting and capable of alleviating dreadful and incurable diseases. Rasa aushadhis have more shelf life as compared to herbal formulations. Gandhaka Jarana enhances the therapeutic qualities of Parada and Murchchhana converts it into medicinal form. In the context of Gandhaka Jarana, Jarana is a process and murchchhana is its result. Khageswara Rasa is an outcome of Gandhaka Jarana process and Kupipakwa process is its further advancement. Due to Gandhaka Jarana the drugs became more safe and nontoxic and have satisfactory result on Switra.

Pharmaceutical Study

Pharmaceutical study was conducted in several experiments to obtain the contents in desired form for preparation of Khageswara Rasa as per actual reference. The pharmaceutical procedures adopted in this study are Shodhana, Bhavana and Kupipaka procedure. Kajjali (Shuddha Parada, Shuddha Gandhaka in ratio of 1:1) and Shuddha Kasisa were taken in 2:1 proportion and processed together with Arjuna twak kwatha as Bhavana, then preparation of small Balls like pellets from this Bhavita mixture, finally these Balls are subjected to Kupipaka to prepare Khageswara Rasa.

Shodhana of Parada was carried out by doing mardana with Sudha churna in khalwa yantra for three days and filtered through cloth. Then Lasuna kalka was added in equal quantity and Saindhava lavana was added in half the quantity of Parada and mardana was carried out till the kalka became completely black. After completion of mardana washing of contents was done with hot water to obtain Shuddha Parada.

Shodhana of Gandhaka was carried out by placing it in an iron ladle along with sufficient quantity of Ghrita. It was heated up to melting and poured in a vessel of milk. The mouth of vessel was tied with cloth which was smeared with Ghrita. Then it was washed with hot water and powdered. This procedure was repeated for seven times to obtain Shuddha Gandhaka.

Shodhana of Kasisa was carried out with Bhavana of Bhringaraja swaras. The Shodhita Parada, Shodhita Gandhaka and Shodhita Kasisa were powder separately. Kajjali was
prepared by mixing equal quantity of Parada and Gandhaka. In this Kajjali, Kasisa was added in half amount of Kajjali and triturated to get fine homogenous mixture.

The mixture thus prepared was subjected to Bhavana with Arjuna twak kwatha for three days. This enhances the bala (Potency) of aushadhi dravya, helps in the particle size reduction. Now small Balls like pellets are prepared from this mixture. The purpose behind making of small Balls, to increase the total surface area of raw drug for proper agni sanskara during the process of Kupipaka.

The Khageswara Rasa is prepared with the well dried, small Balls by Antardhum Kupipaka Rasayana method. These Balls is filled up to 1/3rd portion in the Kupi. After filling mouth of Kupi closed by cork and dried up. It is later placed in Valuka Yantra and again sealing of Valuka Yantra by a sarava is done. Heating procedure was continued in three phases for 36 hours. After the end of last stage of heating phase Kupi was kept for self cooling. Finally Ubhaythastha Khageswara Rasa was collected.

**Analytical Study**

Final product was subjected to analysis with highly sensitive analyzers like XRD and SEM with EDS for checking their identity, crystalline structure and particle size. Khageswara Rasa shows weight loss on drying i.e. 1.69 % which indicates the preparation has less moisture value, suggesting its long shelf life. Total ash value of Khageswara Rasa is 22.41%. pH Value of Khageswara Rasa is 4.9 which means the drug is acidic in nature.

**XRD** was carried out for sample Khageswara Rasa. It was clear in the report that all peaks are of Hg, S and Fe. In the **SEM** analysis particle size was Maximum 540.4nm and 440.1nm was Minimum at 5K magnification and 335.4nm (max), 281.1nm (mini) at 7K magnification. This proves that the drug can be easily absorbed.

**EDX** report shows Hg-72.34% and S-27.64% in sample I of Khageswara Rasa i.e. final product optioned from neck of the bottle. Sample II report shows Fe-88.25% and S-11.75% i.e. final product optioned from bottom of the bottle. The results show that Hg, S and Fe are present in Khageswara Rasa.

**Clinical study**

Clinical trial was conducted to check therapeutic efficacy, following ‘Randomized Open-Labeled Clinical trial’ protocols in OPD and IPD of TTD’s S.V Ayurveda college and
hospital Tirupat A.P. Khageswara Rasa provided statistically high significant (p<0.0001) relief on over all symptoms of Switra. Significant result on the symptoms likes Twakshewata, Twakrukshata, Daha, Colour, and Hb% and show not significant result on symptoms likes Kandu, Romavivarnata, and Margin.

**CONCLUSION**

Khageswara Rasa for present study was adopted from Rasa Ratna Sammuchya (20/81-84) and Rasa Yoga Sagar I (Yoga 356/1526-1529).Khageswara Rasa is a Saagni, Sagandha murchana of Kasisa and Kajjali in the ratio of 1:2 through Kramagni paka for 36 hrs by Antardhuma Kupipaka method. From the Process of Preparation of Kupipaka the final product obtained was 83.4 gm from 210 gm of Bhavita mixture. XRD reports of Khageswara Rasa shows all peaks of Cinnabar and Ferrous sulphide. The average crystallite size of drug was 490.25 nm at 5K and 308.25 nm at 7K. Khageswara Rasa is effective in treating chief symptoms of Switra like Twak shwetata, Rukshata, Daha, and Colour and the symptoms likes Margins, Kandu and Romavivarnata shown not significant result. These results clearly depict that Khageswara Ras is a more reliable and beneficial drug than other medicines that are used for treating Switra.