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RESEARCH REVIEW OF RASAPUSHPA

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ABSTRACT
Rasayanas are used to provide nutrients needed by the body for physical and mental well-being. Kupipakva Rasayana is one of the preparations that is mainly used for rejuvenation therapy and critical illnesses as emergency medicine. Rasapushpa is one of the Kupipakva rasayana of Nirgandha type. Rasapushpa is very effective in Vicharchika disease, eczema, and acute and subacute inflammation. In addition, it is very effective for wounds caused by syphilis and cholera bacteria. It has an action against E. coli, Klebsiella organism, and Proteus organism. It can be used as medicine directly, or as an ingredient for other formulations like Candanadivatika, Rasapuspa malahara, Rasapuspadya malahara. In the present study researches carried out on Rasapushpa are gathered from available resources and are discussed.
KEYWORDS: Kupipakva Rasayana, Rasapushpa, Vicharchika, Eczema, inflammation, Damaru yantra

INTRODUCTION

Processing of *Rasaousadhi* (Formulations of *Parad*) is classified into four types these are *Kharleeya Rasayana, Parpati Kalpana, Kupipakva Rasayana,* and *Pottali Kalpana*. In the *Kupipakva Rasayana* method, medicines are prepared in a *kupi* and are heated through a sand bath until the processed medicine settles at the neck or top of the *kupi*. *Kupipakva Rasayanas* are prescribed very commonly in Ayurveda clinical practice owing to their properties like subtle dose quantity & due to augmenting effect. The action of these medicine remains for a longer period which indicates their greater potency and efficacy. *Parada* and *Gandhaka* are the main ingredients of *Kupipakva Rasayana*. Some formulations are also prepared in the absences of *Gandhaka*. According to the presence of *Gandhaka*, it is classified as *Sagandha* and *Nirgandha*. The application of heat plays a major role during the preparation of *Kupipakva rasayanas*. According to the type preparation, the temperature is adjusted as mild, moderate and intense. Based on heating patterns *Kupipakva Rasayans* are also classified as *Antaradhuma* and *Bahirdhuma*.

Classification of Kupipakva Rasayanas

A. According to the presence of ingredients.			
Sl Number	Types	Description	Example
1	Sangandha	Prepared with the use of gandhak	Makardhwaj
2	Nirgandha	Prepared without the use of gandhak	Rasakarpura
B. According to the process of manufacturing.			
1	Antaradhuma	Cork is applied in the beginning and vapours are not allowed to escape	Rasasindura
2	Bahirdhuma	Cork is applied after burning of sulphur	
C. According to the place of the finished product.			
1	Kanthasta	The finished product is deposited at the neck	Makardhwaj
2	Talastha	The product is obtained from the bottom of Kupi.	swarnavanga
3	Ubhaysatha	Final products obtained from both sites	Samirpannag

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MATERIALS AND METHODS

Among all *Kupipakva Rasayanas*, *Rasapushpa* is one of the popular formulations which is commonly used by Ayurveda physicians. Now we discuss the efficacy of *Rasapushpa* with the help of research work which is already been published.

A randomized clinical trial of *Rasapushpadi Malahara* on *Vicharchika* w.s.r. to *Eczema*

Here the Author Reetesh Ramnani et al., prepared two types of *Rasapushpa* one is the *Kupipakva* method and the second one is the *Damaru yantra* method by taking reference of *Rasatarangini*. Both the samples were further used to prepare two samples of *Rasapushpadi Malhara* using *Siktha taila* as a base. *Siktha* & *Til taila* was taken in a ratio of 1:5. Then randomised control trials between two groups are done. 30 patients of *Vicharchika* were randomly selected as per classical signs & symptoms for the study, from the OPD and IPD of NIA, Jaipur. Again, they divided randomly these patients into two groups of 15 patients each. For one group they gave twice-daily *Rasapushpadi Malahara* sample 1st, made by *Kupipakva* method and for the second group twice daily by *Rasapushpadi Malahara* sample 2nd made by *Damaru yantra vidhi*. In each group, external application is done. In the end, both groups showed significant results on different clinical parameters like *Kandu, Daha, Srava, Rukshta, Pidika, Vaivaranyata, Pidika,* and *Raji*. But *Rasapushpa* prepared by *Damaru yantra* method showed a highly significant result in EASI Score, which indicates the severity of *eczema*.

It is concluded that *Rasapushpadi Malahara* is very potent in the treatment of *Vicharchika*. It contains both mineral and herbal drugs who all have good antibacterial and antifungal properties e.g. *Parada*, *Kasis*, *Saindhava*, *Sphatika*, Wax, and *Tila taila*. So, *Rasapushpadi Malahara* showed significant results only by external application[1].

A pharmaceutico-analytical study of *Rasapushpa* with special reference to its in-vitro antimicrobial activity

This research article was published by Prema Kalmegh et al., here Author planned to assess the antimicrobial activity of the *Rasapushpa* on the causative organism *Treponema Pallidum*. Because it is already mentioned in *Rasatarangini* that *Rasapushpa* is a highly effective wound caused due to *Syphilis* and microorganisms causing *Cholera*.

Under materials and methods, they have taken *Parada*, *Kasis*, and *Saindhava Lavana* each 150gm and prepared *Rasapushpa* as described in *Rasatarangini*. After the preparation of the *Rasapushpa* confirmatory test was done by taking one pinch of *Rasapushpa* and dissolving it in distilled water using a test tube. Then to this solution, a few drops of ammonia were added. At the bottom of the test tube, a black precipitate was formed so it was proved that the precipitate formed is Mercurous Chloride (HgCl) i.e., *Rasapushpa*.

The prepared medicine was first tested for organoleptic characteristics such as order, colour. Physicochemical analysis of pH, Loss on drying, determination of ash value, determination of acid insoluble ash and water-soluble extractive, fineness of particles and X-Ray diffraction were also done. Assay of Elements was done to calculate the % of Mercury, Sulphur, Sodium and Chlorine.

Require quantity of Agar solution was prepared according to the standard ratio of pH 7.2. The sterile nutrient Agar medium was cooled to 45ºC and spread with 106 cells/ml of respective bacterial culture individually and 5 holes or wells about 9mm in diameter were cut in the medium with a sterile cork borer. Then Disc was prepared.

The antimicrobial activity of *Rasapushpa* was studied to determine the zone of inhibition per mm against selected organisms for *Treponema Pallidum*. Thus, *Rasapushpa* has revealed good antimicrobial activity for the above organism. The author concludes that *Rasapushpa* has shown a better zone of inhibition against *Treponema pallidum* and thus showed good antimicrobial activity[2].

***Rasapushpa*-Effect on acute and sub-acute inflammation**

Here Author Dr Akhilesh Shrivastava et al., have evaluated the anti-inflammatory activity of *Rasapushpa* on albino rats.

Here Rasapushpa was prepared by Kupipakva method as per Text *Rasatarangini* (6/29-31). 100g purified *Parad*, 100g purified *Kasis* (ferrous sulphate) and 100g *Saindhav* (rock salt) was taken. First *kajjali* is prepared by triturating Parad and *Kasis*. *Saindhav Lavan* is added and again triturated. Then this *kajjali* is processed with the *Kupipakva* method and *Rasapushpa* is obtained.

Then Animal experiments were performed on Wister strain rats of either sex.

Rasapushpa is water-insoluble so dilution and the oral dose were made in form of suspension. The suspension of *Rasapushpa* and Diclofenac was made with 0.25% of carboxymethyl cellulose sodium (CMC) by w/v. According to Text, the dose of *Rasapushpa* is 65-125 mg/day.

Dose in rats (per kg body weight) = human dose x 0.018 x 5 The doses of RP calculated in rats were 6 mg/kg & 12 mg/kg body weight.5, 6 Suspension was prepared for 6 mg/ml/kg by 60 mg RP added in 10 ml of 0.25% of CMC and for 12 mg/ml/kg by 120 mg RP added in 10 ml 0.25% of CMC, drug was administered by tuberculin syringe.

In conclusion, it is shown that the anti-inflammatory effect of *Rasapushpa* is dose-dependent. In acute inflammation, the dose of 12mg/kg of *Rasapushpa* showed highly significant anti-inflammatory activity compared to Diclofenac (standard) but a dose of 6 mg/kg showed less significant anti-inflammation activity. In sub-acute inflammation decrees in granuloma weight by *Rasapushpa* indicate the significant proliferative activity. A microscopic study also showed granuloma tissue with predominantly collagen deposition that re-confirms the anti-inflammatory activity of *Rasapushpa*[3].

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Rasapushpa-anti-microbial activity

Anti-microbial activity of *Rasapushpa* was done at IPGT&R, Jamnagar, Gujarat, by Shailesh Nawakar. *Rasapushpa* is prepared by various methods i.e.

a. *Kupipakva* method using all the ingredients viz. *Hingulottha Parada, Suddha Kasis* and *Saindhava* in equal proportions. (RPKE)
b. *Kupipakva* method using the ingredients, *Kasis* & *Saindhava* in Double proportions than *Parada*. (RPKD)
c. *Damaru yantra* method using all the ingredients viz. *Parada, Kasis, Saindhava* and *Sphatika* in Equal proportions. (RPDE)
d. *Damaru yantra* method using the ingredients *Kasis, Saindhava* and *Sphatika* in Double proportions than *Parada*. (RPDD)
e. *Suksmausadhi* sample was prepared by mixing 1 part of the RPDE sample with 9 parts of pure lactose and triturated it for 32 hrs. This was its first dilution. Again 1 part of this firstly diluted sample was mixed with fresh 9 parts of pure lactose and triturated for 32 hrs. (SMD)

The mean temperatures of *Rasapushpa* the range were 105°C + 5°C at Mrdu agni stage; 220°C + 10°C at Madhya agni stage and 360°C + 20°C at Tivragni stage.

After the preparation of all samples toxicity study and the antimicrobial study were done.

From an Analytical study, it is concluded that RPKD shows superior quality to the other three samples.

In the NPS test pattern spots of *Rasapushpa Kupipakva* with an equal proportion of ingredients and *Rasapushpa Kupipakva* with double proportions except Hg were very similar to each other, also spots of *Rasapushpa Damaru yantra* with an equal proportion of ingredients and *Rasapushpa Damaru yantra* double proportion of ingredients except Hg are similar to each other but minute differences may be the identification marks for individual samples. Also, in the NPS test, all four samples were having specific purple spots of mercurous chloride and reddish shades of mercuric chloride (as impurities), but finally, all four samples were showing the dominance of mercurous chloride.

The conclusion of the toxicity study revealed that none of the samples seems to be highly toxic, but it also shows that *Rasapushpa Damaru yantra* equal proportion of ingredients was least toxic in comparison to the other three samples.

The antimicrobial study reveals that all the group samples (except *Suksmausadhi*) have an action against *Staphylococcus aureus* above the concentration of 35µg in each disc.

RPKD, RPDE and its *Suksmausadhi* sample have an action against *E. coli* above the concentration 4.12µg in each disc.

None of the samples has shown action against *Pseudomonas aeruginosa*.

RPKE, RPDE, RPKD and RPDD samples have an action against *Klebsiella* organism above the concentration of 70µg/disc.

All the samples except *Suksmausadhi* have an action against the *Proteus* organism above the concentration of 35µg in each disc. RPKD was the most active among all samples, showing activity in lower concentrations (8.25µg/ disc) also[4].

DISCUSSION

Rasapushpa is a mineral formula widely used by Ayurvedic doctors. There are different types of *Rasapushpa* available. Some researchers have also changed its dosage form. One of the clinical studies was done by *Rasapushpadi Malahara* on *Vicharchika* W.s.r in eczema. Here *Rasapushpadi Malahara* shows high efficiency in *Vicharchika* with clinical parameters like *Kandu, Daha, Srava, Rukshata, Vaivaranyata, Pidika*. But *Rasapushpadi Malahara* prepared by *Damaru Yantra* showed highly significant results in the EASI score, indicating the severity of eczema. In *Rasatarangini* it is mentioned that *Rasapushpa* is very effective against ulcers caused by syphilis. To demonstrate this, a pharmacological analysis study of *Rasapushpa* with special reference to its in vitro antibacterial activity was performed. It is shown here that *Rasapushpa* has a better zone of inhibition for *Treponema pallidum* and thus shows good antibacterial activity. From another study, *Rasapushpa* has also been shown to be important in acute inflammatory conditions. Microscopic studies also showed granulomatous tissue with a predominantly collagenous deposition, also confirming its anti-inflammatory activity. In another study, *Rasapushpa* was shown to be effective against *Staphylococcus aureus* at a concentration of 35µg in each disc, which is very effective. *Rasapushpa* has no effect on *Pseudomonas aeruginosa.* Furthermore, it is active against *Klebsiella* organisms above a concentration of 70µg/disc.

CONCLUSION

From the available resources, we could get Four published Research. The remaining are classical review articles. Among 4 articles one is on a clinical trial, two are on pharmaceutical-analytical and Anti-microbial another one is an Animal study. After reviewing these available 4 types of research we can conclude that *Rasapushpa* is safe antimicrobial preparation which can be used in various skin diseases.

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