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A pharmaceutico-clinical study of Rasamanikya W. S. R. to vicharchika (Eczema)

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Abstract
Nearly 10 million people in India alone are suffering of *Vicharchika* i.e., Eczema. Globally all races suffer from this disease. In the Indian context it is particularly a major cause of concern among masses because of the social stigma attached with this disease. This disease may cause depression among masses. Vicharchika falls under the category of Kustha Roga. Rasmanikya, prepared from *hartal* (As$_2$S$_3$) has been described as Kusthaghna for the treatment of *Vicharchika* in various classics of Ayurveda. Seeing the plight of people this topic entitled "A Pharmaceutico-clinical Study of Rasamanikya w. s. r. to Vicharchika (Eczema)" has been undertaken for the present study.

Keywords: Eczema, vicharchika, Rasamanikya, Kushthagna, pharmaceutico study

Introduction
Acharya Charka described *'Vicharchika'* under *Kshudra kustha* with the lakshanas *Kandu, Shyavapidaka* and *Bahusrava* [1]. Authors like *Yogratnakara, Madhavkara* and *Vangasena* too referred to the above-mentioned clinical features. According to Acharya *Sushruta*, the *lakshanas* are *Rajyo, Atikandu, Ruja,* and *Rukshata* involving the domination of *Pitta* [2]. Acharya *Charaka* explains it as *Kaphapradhana vyadhi* [3]. According to Acharya *Sushruta,* it occurs due to domination of *Pitta* [4]. The commentator *Shrikanth Datta* mentions *Vicharchika* as of *Tridosha Pradhana* in which *Kapha* produces *Kandu, Bahusrava* due to *Pitta* and *Shyavata* due to *Vata* [5].

Bhaishajyaratnavali indicates *"Rasamanikya"* (Orally) for the management of *Vicharchika* [6] which mainly contains *Haritala*, having *Kaphaghna, Pittarechaka, Kushtaghna, Kandughna & Shothahara* actions. *Rasmanikya*, prepared from *haritala* (As$_2$S$_3$) has been described for the treatment of *Vicharchika* in various classics of Ayurveda e.g., *R.R.S., R.T., R.S.S, Bhaishjyaratnawali etc.*

Vicharchika falls under the category of Kustha Roga. Hence the reference of Rasmanikya as Kusthaghna has been mentioned in the following classics of Ayurveda-
1. Rasa Ratna Samuchchaya - 3/ verse 79
2. Rasendra Sara Sangraha- 2/199 -124
3. Rasa Tarangini- 11 / verse 83-89, 94-98, 99-102

Nearly 10 million people in India alone are suffering of *Vicharchika* i.e., Eczema. Globally all races suffer from this disease. In the Indian context it is particularly a major cause of concern among masses because of the social stigma attached with this disease. This disease may cause depression among masses. Seeing the plight of people this topic entitled "A Pharmaceutico-clinical Study of Rasamanikya w. s. r. to Vicharchika (Eczema)" has been undertaken for the present study.

Objective of the study
- To assess the effect of Rasamanikya on the general symptoms of Vicharchika.
- To observe the efficacy of Rasamanikya against haematological and biochemical parameters.

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Materials and Methods

The patients fulfilling all the inclusion and exclusion criteria, ageing between 25 yrs to 60 yrs were selected from the OPD and IPD of Sri Sai Ayurvedic P.G. Medical College, Aligarh.

Trial Groups

Total 40 patients fulfilling the inclusion criteria, were selected for the present study. All the selected and diagnosed patients were divided into two groups of 20 patients each. Out of 40 patients, 10 patients left the treatment against medical advice (LAMA).

- **Group A:** Rasamanikya 125mg BD.
- **Group B:** Placebo (Turmeric powder 125 mg) BD.
- **Mode of Administration:** Oral.
- **Duration of trial:** 2 months.
- **Follow up:** After 15 days.

Selection criteria

Inclusion criteria

1. Patients willing for trial.
2. Patient between the age group 25 years to 60 years were selected irrespective of sex, religion and socio-economic status.
3. Duration of disease must be of less than 3years.

Exclusion criteria

1. The patch which is infected and having pus collection.
2. Patient with any acute or chronic systemic disorder.
3. Patient suffering of Diabetes, Tuberculosis etc.

Criteria for assessment: For the purpose of assessment of signs and symptoms of Vicharchika, a scoring system was adopted to analyze the results statistically. The details of the scoring patterns adopted in this is given below.

Table 1: Grading of Subjective parameter

Sr. No.	Signs	Grade 0	Grade 1	Grade 2	Grade 3
1.	Kandu (Itching)	No itching	Itching present rarely	Itching disturbing patients' attention	Severe itching disturbing patients sleep
2.	Srava (Discharge)	No Srava	Occasional Srava after itching	Mild Srava after itching	Profuse Srava making clothes wet
3.	Pidaka (Papules)	Absent	1-2 Pidaka in one affected part	3-4 Pidaka in one affected part	More than 4 pidaka in one affected part
4.	Shyavata/ Vaivarnyata (Discoloration)	Normal skin color	Brownish red discoloration	Blackish red discoloration	Blackish discoloration
5.	Rookshata (Dryness)	No dryness	Dryness with rough skin (Rooksha)	Dryness with scaling (Khara)	Dryness with Cracking (Parushata)
6.	Daha (Burning sensation)	Absence of Daha	Rarely burning sensation in affected part	Continues burning sensation in affected part	Disturbing patients sleep

Table 2: Objective parameter: Numbers and Measurements of area of patches

Sr. No.	Signs	Grade 0	Grade 1	Grade 2	Grade 3
1.	Number of patches	No patch	1-2 patches	3-4 patches	More than 5 patches
2.	Area of patches	-	In between 0-10squarecm	In between 10-20 Square cm	More than 20 square cm

Observation: Observation was based on findings and reductions in clinical features and improvement in laboratory parameters during the course of trial period. All the patients were studied for general observations-

Table 3: Effect of trial drug on the clinical feature Shyavata

Group	N	Mean score BT	Mean score AT	Reduction in mean score	% Of reduction in mean score	S.D	S.E	't' Value	'P' Value
Gr-A	8	1.3	0.6	0.73	55	0.59	0.15	4.78	<0.001
Gr-B	12	1.3	0.66	0.66	50	0.61	0.15	1.18	<0.01

In this study before the treatment mean scoring of Shyavata was 1.3 and after treatment the mean score was reduced to 0.6 & 55% improvement was observed which is statistically highly significant with $p<0.001$. In Group- B the mean score was reduced to 0.66 with 50% which is moderately significant with $p<0.01$.

Table 4: Effect of trial drug on the clinical feature Rookshta

Group	N	Mean score BT	Mean score AT	Reduction in mean Score	% of reductionin mean score	S.D	S.E	't' Value	'P' Value
Gr- A	10	1.2	0.4	0.8	66.66	0.56	0.14	5.52	<0.001
Gr- B	10	1.2	0.53	0.66	35	0.48	0.12	5.29	<0.01

The above data depicts that mean scoring of Rookshata before the treatment was 1.2 and after treatment the mean score was reduced to 0.4 & 66.66% improvement was observed which is statistically highly significant with $p< 0.001$. In Gr- B the mean score was reduced to 0.53 with 35% which is moderately significant with $p<0.01$.

Table 5: Effect of trial drug on the clinical feature Daha

| Group | N | Mean score | | Reductio in mean score | % of reduction in mean score | S.D | S.E | 't' Value | 'P' Value |
		BT	AT						
Gr- A	4	0.46	0.26	0.2	42	0.41	0.10	1.87	<0.01
Gr- B	10	0.46	0.33	0.13	28.57	0.35	0.09	1.46	>0.05

In the present study before the treatment mean scoring of Daha was 0.46 and after treatment the mean score was reduced to 0.26 & 42% improvement was observed which was statistically significant with $p<0.01$. In Group- B, the mean score was reduced to 0.33 with 28.57% improvement which is statistically not significant with $p>0.05$.

Table 6: Effect of trial drug on the clinical feature Srava

| Group | N | Mean score | | Reduction in mean Score | % of reduction in mean score | S.D | S.E | 't' Value | 'P' Value |
		BT	AT						
Gr- A	10	1.86	0.73	1.33	60	1.12	0.29	3.9	<0.01
Gr- B	10	1.86	1	0.86	40.43	1.06	0.27	1.17	>0.05

The above data depicts that mean scoring of Srava before the treatment was 1.86 and after treatment the mean score was reduced to 0.73 & 60% improvement was observed which is statistically moderately significant with $p< 0.01$. In Group- B, the mean score was reduced to 1.0 with improvement of 40.43% which is non-significant with $p>0.05$.

Table 7: Effect of trial drug on the Number of Patches

| Group | N | Mean score | | Reduction in mean Score | % Reduction in mean score | S.D | S.E | 't' Value | 'P' Value |
		BT	AT						
Gr- A	15	1.06	0.53	0.53	50	0.51	0.13	4	<0.001
Gr- B	15	1.06	0.73	0.33	31.25	0.48	0.12	2.64	>0.05

Number of patches: In the present study before the treatment mean scoring of Number of patches was 1.06 and after treatment the mean score was reduced to 0.53 and 50% improvement was observed which is statistically highly significant with $p< 0.001$. In Group- B, the mean score was reduced to 0.73 with 31.25% improvement which is statistically non-significant with $p> 0.05$.

Table 8: Effect of trial drug on the Area of Patches

| Group | N | Mean score | | Reduction in mean Score | % Of reduction in mean score | S.D | S.E | 't' Value | 'P' Value |
		BT	AT						
Gr- A	15	1.13	1	0.13	11.76	0.35	0.09	1.46	>0.05
Gr- B	15	1.13	1.06	0.06	5.88	0.25	0.06	1	>0.05

Area of patch: For area of the patch before the treatment mean scoring was 1.13 and after treatment the mean score was reduced to 1 & thus 11.76% improvement was observed which is statistically insignificant with $P>0.05$. In Group- B, mean score was reduced to 1.06 with 5.88% improvement was observed which is statistically insignificant with $p>0.05$.

Discussion

Discussion on the preparation of Rasmanikya by two methods
- Mica Sheet Method - R.T. 11 / 91-93
- Antardhoom Method - R.T. 11 /85-87

Table 9: Yield of Rasamanikya by these two methods can be understood by the following table

Media of shodhita Haritala	Colour of Shodhita Haritala	Colour of Rasamanikya	Yield of Rasamanikya
Kushmanda swarasa	Slight cream	Dark Red	92%
Dadhi + Kushmanda swarasa (Bhawana)	Dull Yellow	Blackish	90%

This shows the yield of Rasamanikya by first method (92%) is more as compared to Bhawana method (90%).

Analytical Study

The organoleptic and physico-chemical characteristics of Rasamanikya were determined at the laboratory of the PG dept of Rasa Shastra & Bhaishjya Kalpana, Sri Sai Ayurvedic P.G. Medical College, Aligarh. Analytical studies on the different samples of Rasamanikya by Xray diffraction, ICP-MS and FESEM at IIC, IIT, Roorkee have shown these following features (Ref- Dr S. C. Jha, G.A.C.H., Patna)-

ICP-MS: It is one of the hydride generation methods known as a standard tool to get the purity of Arsenic and other metals. In this report different elements such as Na is found as 0.075%, K as 0.056%, as 29.365%, Fe as 0.179%, Cu as 0.002%, Pb as 0.006%, Zn as 0.053%, Cr as 0.001%, Mn as 0.001% and Mg as 0.030%.

X-ray Diffraction: When a suitable specimen is exposed to a beam of X-ray at a suitable angle, X-ray appears to be reflected and the phenomenon is actually diffraction. The angle of diffraction and the intensities of the diffracted beams becomes a measure of the composition of the

specimen or lattice spacing of the crystal. W.L. Bragg presented a simple explanation of the diffracted X-rays from a crystal. According to him from a crystal whose lattice planes are spaced 'd' apart, X-ray of wavelength λ will be diffracted at an angle θ, where diffraction is related with the relation 2d sinθ=nλ. In the system wavelength remain fixed while angle is scanned to find out the angle of diffraction for a sample. It reveals detailed information about the chemical composition and crystallographic structure of the materials.

SEM: When an electron beam strikes the sample which is at ground potential (For non-conductive sample a thin conducting layer is sputtered to make it conducting, to avoid charging) the back scattered electrons, X-rays, secondary electrons etc. are radiated. Appropriate collection and processing of these radiations give a lot of information about the surface, atomic number, content and composition. Secondary as well as back scattered electrons are used to form the image on the computer monitor for various application. Variable pressure mode is also available for samples which cannot be coated. The images can be recorded on the computer as well as on camera.

Mica sheets prepared samples of Rasamanikya crystals has been sputtered for 30 minutes and the oxides are removed, the stoichiometric ration of As and S is seen. So, the oxide may be residing on the sample surface. This confirms that it contains very minimum level of oxides and after powdering it vanishes. The change in the colour of the sample might have been caused by the sulphur on the surface. Rasmanikya has been analyzed under SEM at four different resolutions i.e., at 100X, 500X, 1000X and 2500X respectively.

In physico-chemical parameters
Ash Value (w/w): Ashuddha Haritala 0.05 and Kushmanda swarasa treated Rasamanikya (Mica) is 1.02.
Arsenic percentage (w/w) of Ashuddha Haritala is 57.95 and kushmanda swarasa treated Rasamanikya is 59.74.

Melting point determination: Temperature of melting point is noted in a conventional method by using electrical muffle furnace. There is variance of melting points. It may be because of the raw materials and various procedures involved for shodhana of Haritala. This assessment is done to get the temperature pattern of Rasamanikya.

Conclusion

Table 10: Overall Results of the therapy in Patients of Vicharchika

Improvement criteria	Group-A		Group-B	
	No.	%	No.	%
Cured	10	66.67	0	0
Moderate Improvement	1	6.66	4	26.67
Improved	4	26.67	6	40.0
Unchanged	0	0	5	33.33

From the above values, as per overall results are concerned in the Group- A, 10 patients i.e., 66.67% showed complete improvement, one patient (6.67%) showed moderate improvement, 4 patients (26.67%) showed improvement and no patient remained unchanged after the completion of therapy. As far as Group- B (placebo group), is concerned no patient shown complete improvement, 26.67% patients shown moderate improvement, 40% improved whereas 33.33% remained unchanged in this group.
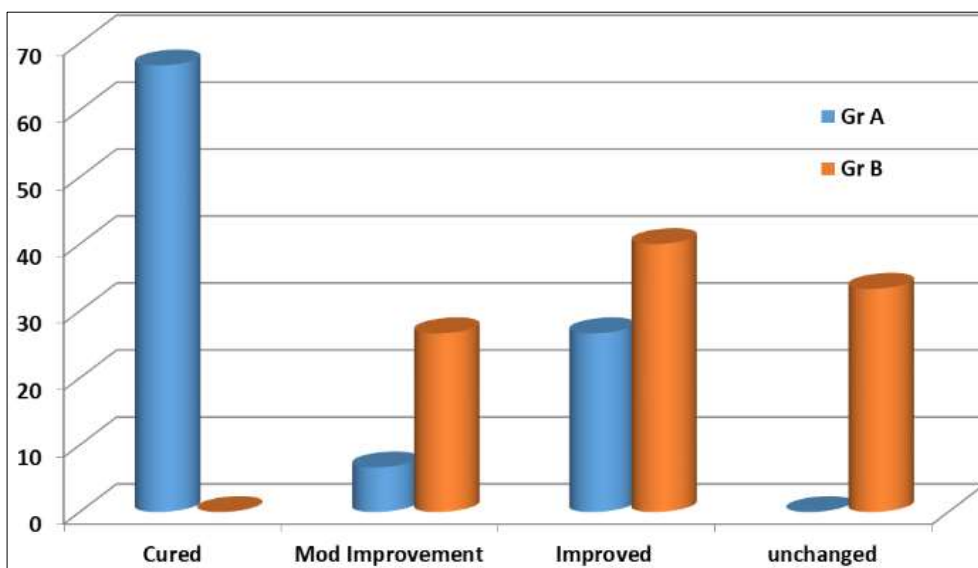

Fig 1: Chart showing the Overall Results of the therapy in Patients of Vicharchika
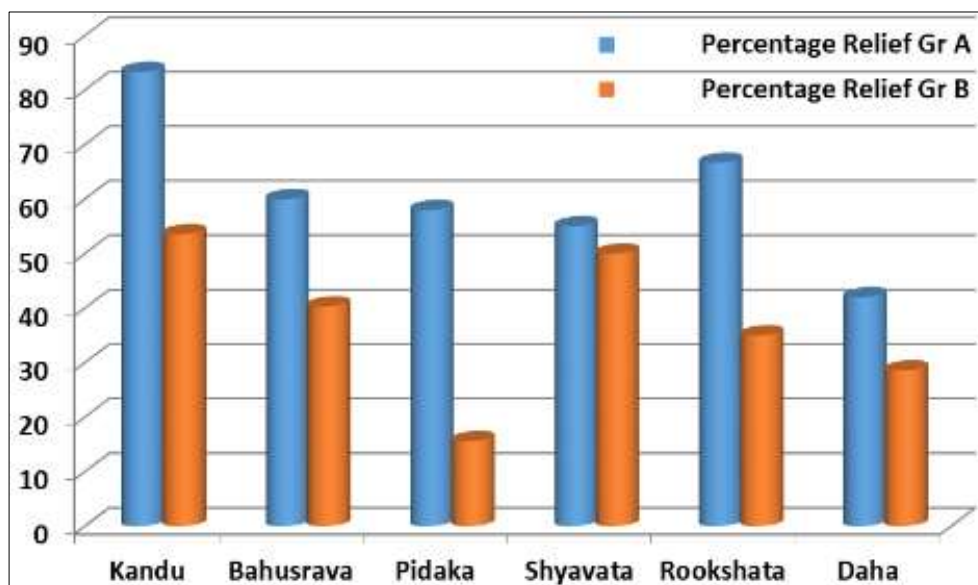
Results

Fig 2: Chart showing the% relief in clinical features after the completion of therapy

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