



A CHEMICAL ANALYSIS OF SHANKHA BHASMA AND ITS EFFICACY ON GRAHANI ROGA

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ABSTRACT

Shankha is well known since Vedic period its synonyms, pharmacological properties, action and therapeutic indications are mentioned in Ayurvedic classics. Shankha used in the form of bhasma is mainly for gastrointestinal disorders i.e. Amlapitta, Grahani, Atisar, Pravahika, Agnimandya etc. in the form of formulations. The disease "Grahani Roga" is the main & leading disorder of the gastrointestinal tract. As the hypo function of Agni i.e. Mandagni is the root cause of all the disease, Grahani Roga is also mainly caused by Agnidushti.

KEYWORDS : *Shankha, Grahani Amlapitta, Atisar, Pravahika, Agnimandya.*

INTRODUCTION:

Ayurveda is one among such glorious proud of India. Although it is very old yet even in this era it has enormous treasure of life science for all. Several achievements of today's advancing medical science are already incorporated in the treatise of Indian medicine. But as these concepts were suggested several centuries ago, so in a view of availability of newer methods of investigation in modern age, these concepts need critical analysis, comments, elaborations and scientific explorations to bridge the gap existing between Ayurveda and Western modern medical science.

ANALYTICAL STUDY--

ANALYSIS OF SHANKHA BHASMA:

A) Organoleptic characters:

Organoleptic characters are often used for analysis of pharmaceuticals. Sometimes they play an important role in evaluating their quality. In Ayurvedic texts the general characters mentioned for evaluating the quality of *bhasma* preparations are mainly organoleptic in nature.

Organoleptic Characters of *Shankha Bhasma*

Organoleptic Parameter Properties

1. Color - White
2. Taste Slight - Alkaline
3. Touch - Smooth & fine
4. Odour - Not specific
5. *Rekha* purnatva - Positive
6. *Varitaratva* - Negative (due to hygroscopic)
7. *Slakshnatva* - Positive
8. *Mrudatva* - Positive
9. *Niswadu* - Positive (Slight Alkaline)

According to Ayurvedic text generally a *bhasma* should possess the quality like *Rekha* purnatva, *Varitaratva*, *Slakshnatva*, *Mrudatva*, *Niswadu*.etc. The sample possess almost all the desirable qualities.

b) Physico-chemical Parameters:

Physico-chemical parameters of *Shankha Bhasma* are

Loss on drying = 0.05 % w/w

Ash value = 62.98 % w/w

Acid Insoluble ash Negligible pH (of filtrate of 10% w/w aqueous suspension) = 10.6

Calcium content as CaO = 42.66 % w/w

The values of almost all the parameters of *Shankha bhasma* sample is similar to the earlier reported values.

Analysis of *Shankha Bhasma Capsule*:

For ease of administration, the *Shankha bhasma* without

addition of any material was filled in gelatine capsule and used for clinical trial, so, the sample of *Shankha bhasma* capsule was analyzed only for the weight variation and disintegration time and the data has been presented below.

Weight Variation Test:

Average weight - 0.333 gm

Highest weight - 0.384 gm

Lowest weight - 0.280 gm

out of 20 capsules except 2 capsules all other were within the limit of

Average weight \pm 10%

Disintegration Time - 15 minutes

PHARMACEUTICAL STUDY:

This study includes

1. Collection of raw drugs
2. *Shodhana* of raw materials
3. *Marana* of *shodhit* materials
4. *Bhasma pariksha*

Physical properties of *Shankha Bhasma*

Colour : White

Smell : Odorless

Touch : Smooth

Taste : Tasteless and corrosive

Appearance : Lusterless white powder

CLINICAL STUDY--

AIMS AND OBJECTIVES OF CLINICAL STUDY:

To assess the efficacy of *Shankha Bhasma* in the management of *Grahani*

MATERIAL AND METHODS:

- **Selection of subject-** 30 patients attending the Kayachikitsa O.P.D. & I.P.D. of Major SD Singh PG Ayu. College & Hospital, Bewar Road, Fatehgarh were selected in the age group of 20 years to 50 years irrespective of race, caste and religion.
- It was an open trial method with Single group only.
- Written & informed consent of patients was taken before trial.
- *Shankha Bhasma* filled in capsule in dose of 250mg twice a day with luke warm water was given for one month.
- A detailed proforma (case history sheet form) was prepared and filled to note down all the details of patients and the disease. Laboratory investigations done at the time of inclusion of patients in trial were also recorded in the proforma for the sake of comparison of these investigation before, during and after treatment.

DIAGNOSTIC CRITERIA

Subjective criteria:

The patients with the complaints of *Grahani Roga (Amavastha)*, i.e. *Muhubaddha/drava Mal pravriti, Aruchi, Udara Shoola, Vistambha* etc. were selected for the study. For the purpose of perfect diagnosis and assessment a special research Performa was designed.

Objective Criteria:

Routine Hematological, Biochemical and Routine-Microscopic, Urine & Stool examination were carried out to assess the general condition and exclusion of other pathogenesis of the patients.

Inclusion Criteria:

- Patients between 16 – 60 years of age group.
- Patients having symptom of *Grahani (amavastha)*, i.e. *Muhu baddha / drava /Durgandhita / Pichchhila Mal pravriti, Aruchi, Udara Shoola, Vistambha, Praseka, Gaurava, etc.*

Exclusion Criteria:

- Patients having age <16 and >60 years.
- Patients suffering from Acute diarrhea, Intestinal T.B., Ulcerative colitis, Gastric and Peptic ulcer, Uncontrolled D. M. and H.T

Dietary Restrictions

The patients were strictly advised to follow the restrictions regarding food, food habits and life style. They were instructed to avoid the possible causative factors for *Ama uttpati*, which can create the disease.

Follow Up:

A follow up study of 4 weeks at every fortnight after the completion of the treatment were also be carried out.

Criteria For Assessment:

- Result will be assessed on the basis of improvement in the signs & symptoms of the disease as mentioned earlier.
- Relief in *Ama Lakshanas* of *Grahani Roga*.
- Improvement in *Rogabala* along with *Dehabala, Agnibala & Chetasabala* was considered for assessment.

Total 100 score has been divided as follows, *Rogabala* - 50 *Agnibala* - 20 *Dehabala* - 10 *Chetasabala* - 20

This score has been further subdivided as following:

Table no. -1

ROGA BALA (50)	DEHA BALA(10)	AGNI BALA (20)	CHETASA BALA (20)
Muhu baddha / drava Mal pravriti-10	Bala vridhhi -6	Ruchi – 5	Nidra Labho yatha kala – 5
Udara Shoola – 5	Swara Varna yoga – 4	Jarana shakti-6	Sukhena Cha Pratibodhana - 5
Udara Gaurava – 5		Abhyavaharana shakti-6	Vaikarika Cha Swapna Adarshana-2
Aapachana- 5		Vata Mootra Purisha Retasam Mukti – 3	Buddhi Indriya Avyappatti – 3
Aruchi – 5			Mano Avyappatti –5
Atop – 4			
Vidaha – 4			
Aalasya- 4			
Vistambha- 4			
Praseka – 4			

OBSERVATIONS

Effect Of Therapy On Symptoms Of Grahni

Table No-2, Effect Of Therapy On Symptoms Of Grahni

Parameter	Mean		%age Diff	t'	P
	B.T.	A.T.			
Muhu Baddha / Drava Mal Pravriti.	6.62 ± 0.25	03.62 ± 0.18	45.31	11.54	<0.001
Udara Shoola	3.07 ± 0.33	1.31 ± 0.16	57.65	14.75	<0.001
Udara Gaurava	2.92 ± 0.31	1.15 ± 0.13	61.03	14.75	<0.001
Praseka	1.8 ± 0.50	0.8 ± 0.37	55.55	3.12	<0.001
Ātop	2.67 ± 0.39	1.00 ± 0.11	62.55	9.82	<0.001
Vidaha	2.43 ± 0.44	0.71 ± 0.20	70.37	9.7	<0.001
Aalasya	2.15 ± 0.15	1.0 ± 0.11	71.16	2.78	<0.001
Āpachana	2.92 ± 0.32	21.08 ± 0.20	63.01	10.76	<0.001
Vistambha	2.0 ± 0.17	0.78 ± 0.12	61.00	4.36	<0.001
Aruchi	2.54 ± 0.28	1.08 ± 0.15	59.05	8.82	<0.001
Bala Vridhhi	3.69 ± 0.17	1.85 ± 0.17	50.13	12.33	<0.001
Swara Varna Yoga	2.30 ± 0.17	1.50 ± 0.27	30.87	2.39	<0.05
Ruchi	2.71 ± 0.13	1.50 ± 0.14	44.65	11.00	<0.001
Abhyavaharana Shakti	3.37 ± 0.12	2.37 ± 0.12	29.67	7.69	<0.001
Jarana Shakti	3.81 ± 0.18	1.81 ± 0.15	54.29	22.22	<0.001
Vata Mutra Purisha Retasa Mukti	1.42 ± 0.20	0.57 ± 0.2	59.86	6.07	<0.001
Nidra Labho Yathakala	2.80 ± 0.14	1.30 ± 0.14	53.57	8.82	<0.001
Sukhencha Pratibodhana	2.33 ± 0.14	1.25 ± 0.18	53.65	6.94	<0.001
Vaikarika Swapna Adarshana	1.18 ± 0.07	0.27 ± 0.09	68.64	6.75	<0.001
Buddhi Indriya Avyapatti	1.78 ± 0.12	0.92 ± 0.14	47.75	8.5	<0.001
Mano Avyapatti	2.90 ± 0.19	1.70 ± 0.16	41.38	9.23	<0.001

Relief in *Daurgandhya* was 85.71, *Kshudraswasa* was 60%, *Angagauravta* was 38.42%, *Atikshudha* was 5.49%, *atipipasa* was 21.54 %, *utsahahani* was 43.75%, *daurbalya* was 50%, *nidradhikya* was 40.48%, *snigdhatrata* was 42.86% and *angashathilya* was 36.36%. Improvement in *daurgandhya, atikshudha, utsahahani, daurbalya* was statistically significant with p<0.05. Improvement in *nidradhikya, angagauravta and atipipasa* was highly significant statistically with p<0.01. Result in other parameters could not be calculated as t value was insignificant.

Table 3 Average Improvement In Chatushabala

%Improvement in Rogabala	%Improvement in Dehabala	%Improvement in Agnibala	%Improvement in Chetasbala	Total Average % relief
60.66	40.5	47.11	52.93	50.33

Table 4 Overall Effect Of Therapy

Assessment	No. of Patients	Percentage
Complete Remission	00	00
Moderate Improvement	13	54.16
Mild Improvement	11	45.84
Unchanged	00	00

Total 24 patients completed the study. Out of 24 patients, 11 patients gained mild improvement (5.84%), 13 patients moderate improvement 54.16% .

CONCLUSION:

1. *Shankha* is mentioned since vedic period.
2. Among the process of *Shankha shodhana*, *swedan* may be considered as an appropriate method for *Shodhana* of *Abhraka*
3. *Dola yantra* should use for *swedan* process with *nimbu swarasa* as liquid medium.
4. *Swedan* process for *shodhan* should be done for three hours
5. Puta with temperature range in between 500^oc - 600^oc constant for 45 minutes is ideal condition in EMF for *Shankha Marana*.
6. On analysis it is found that Calcium, Carbon, Oxygen & Magnesium are major constituent of *Bhasma*.
7. Analytical study proofs that there is addition & deletion of trace elements of media to the *shodhit* and *Bhasmas* Samples.
8. There is no free metal in *Bhasma* as it passed all parameters laid down in *Rasa* literature for *bhasma pariksha*.
9. The particle size is reduced after each process of *shodhana*, and *marana*.
10. FESEM/SEM photographs reveals formation of cluster structure in *Bhasmas*.
11. Clinical study shows that there is no adverse effect of *bhasmas* on patients and have significant role in treatment of *Grahani roga*.

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