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PHARMACEUTICO-ANALYTICAL STUDY OF SHANKHADYANJANA W.S.R TO BHAISHAJYA RATNAVALI.

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Abstract:

Rasashastra is an important branch of Ayurvedic pharmacology. This branch deals with the use of metals, minerals, gemstones and their processing. The modern Indian Ayurveda makes an extensive use of the "Rasashastra" so much so that it has become the vital or inseparable component of the therapeutic process. The science which deals in details about the preparation of different medicine is called as the bhaishajya kalpana. We find two approaches in the treatment of eye disease. One is administration of systemic drugs and the other is used of topical (local). Topical methods of treatment are known to have better local effect than the systemic drugs administrate. Topical drugs reach out to all the part of the eye and exert their action moreover the excellent work done by topical drug in snehana and tarpan of the eye may not be possible from any number of systemic drugs administrate. Shankhadyanjana is a Herbo-Mineral preparation explained in Bhaishajya Ratnavali for netrarog. Here we are trying to study "Pharmaceutico-Analytical Study of Shankhadyanjana W.S.R To Bhaishajya Ratnavali".

Keywords : *Rasashastra, Shankhadyanjana, Bhaisajya Kalpana, Eyes*

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Introduction:

Rasashastra is an important branch of Ayurvedic pharmacology. This branch deals with the use of metals, minerals, gemstones and their processing. In the ancient Ayurveda the emphasis has been over the herbs and their therapeutic uses. Later on, the animal products, metal and mineral started to find favour of the ayurvedic practitioners. The minerals and metals are very effective and potent for immunization, rejuvenation and the elimination of disease. The modern Indian Ayurveda makes an extensive use of the "Rasashastra" so much so that it has become the vital or inseparable component of the therapeutic process. The science which deals in details about the preparation of different medicine is called as the bhaishajya kalpana. We find two approaches in the treatment of eye disease. One is administration ofsystemic drugs and the other is used of topical (local).Methods for treatment with the systemic drugs administration, these topical methods of treatment play a significant role in curing the diseases of eye. Topical methods of treatment are known to havebetter local effect than the systemic drugs administrate. Topical drugs reach out to all the part of the eye and exert their action moreover the excellent work done by topical drug in snehana and tarpan of the eye may not be possible from any number of systemic drugs administrate. Topical user followed in eye disease is called as 'kriyakalpa' many authors have enlisted different kriya kalpa.

Aim & Objectives:

To study "Pharmaceutico-Analytical Study of Shankhadyanjana W.S.R To Bhaishajya Ratnavali"

Objectives

1. To Perform Shodhana of Manashila.
2. To Shodhana and Marana of Shankha.
3. To Prepararion of Shankhadyanjana.
4. Physiochemical analysis of shankhadyanjana according to Ayurvedic and modern parameters

Review of literature:

In ksharagni karma vidhi adhyaya, while explaining the method of preparation of Madhyam Kshar, Vagbhata explains the Shankha as one ingredient.All the drugs which prominently contain 'calcium' are enlisted under the heading 'sudha varga', this group is called as 'Shukla varga' in classics. Natural sources of calcium – Badarashama, Godanti, Khatika, Mukta, Pravala, Sambuka, Shankha.

Anjana kalpana

Anjana is the topical preparation for application into the conjunctival sac. It is

in the super fine paste prepared from micro- fine powder of the selected herbal or the mineral drug. It is applied either with fingers or with special applicators called 'shalaka' It can be applied either in sitting or supine position. These are indicated in Abhishandya, Adhimantha, Timira and Akshishosha.

Drug Review:-

SHANKHA (CONCH SHELL)

Conch is a commen name that is applied to a number of different medium to large-sized "sea snails"or their shells. The shankha which is round bodied with smooth external surface which has small opening towards the base, which is clean and bright like full moon and the one which is lenthy and heavy is considered as the best sample of shankha used for therapeutic purposes. Types of Shankha:

1. Dakshinawarta shankha:-it is rare variety of conch shell.Since it is not abundantly available, it is considered auspicious and used in temple to blow during prayers.
2. Vamavarta shankha:-This is of conch shell it is abudently available.it is the one, which is used for purification, incineration and for all the other compound formulation.

Some of the methods of Shankha Shodhan:

- Shankha is made into smaller pieces and those pieces are tied in a cloth like pottalli. It is hang in a dolayantra containing jambira nimbu rasa as liquid media and subjected for swedana of four yama (12 hours).later the drug in the cloth is washed with water, dried and stored as 'Shuddha Shankha"
- Shankha is made into smaller pieces and those pieces are tied in a cloth like pottalli. It is hang in a dolayantra containing jayanti swarasa as liquid media and subjected for swedana of one yama (3 hours). Later the drug in the cloth is washed with water, dried and stored as 'Shuddha Shankha'.
- Shankha is made into smaller pieces and those pieces are tied in a cloth like pottalli. It is hanged in a dolayantra containing tanduliya swarasa as liquid media and subjected for swedana of one yama (3 hours). Later the drug in the cloth is washed with water, dried and stored as 'Shuddha Shankha'

Shankha Marana:

The pieces of Shuddha shankha are enclosed in a sharava samputa,the samputa is sealed and dried under sun, later it is subjected for one gajaputa when cool on its own, the drug material inside is taken in khalva yantra and triturated to fine powder form. This powder is again enclosed in sharava samputa, sealed, dried and subjected for another

gajaputa. When cool on its own, the while fine powder inside the sharava is collected and stored as shankha bhasma.like this wise with two gajaputa, appropriate shankha bhasma can be prepared.

Properties of shankha bhasma:

Shankha bhasma will have shitala and kshariya properties Its judicious use cures amlapitta roga. It corrects agnimandya and provides strength. It is balya, grahi and cures Grahani roga.It is useful in parinamshula and tarunya pidaka. It is useful in all types of visha roga. To cure severe Atisara and Grahani roga, Shankha bhasma is administered daily in the suitable dosage along with nimbu swarasa.It can help in cases of loss of appetite (agnimandya), Amlapitta roga, gulma roga, sannipatika shula, Atisar rog, chardi roga, etc.

Shankha bhasma is added with the bhasma of kshara of mulaka, triturated with little quantity of water and applied daily over kapharbuda or kaphaja granthi to alleviate the same.

MANASHILA:

Manashila is the sixth mineral drug of Uparas group.This is also a reddish brown arsenic compound, chemically known as arsenic disulphide with chemical formula: Arsenic disulphide.

Manashila type

1. Shamangi:- This varirty will be blackish in colour added with red and yellow. It will heavy and is considered the best varirty out of all the three.
2. Kanaviraka:-This variety will be reddish and lustrous like copper but not yellow. It will be heavier than the earlier variety and is considered 'madhyama' in its qualities.
3. Khandakhya:- This variety will be very brittle. It possesses deep – red colour and will be very heavy. Such a sample of Manashila is considered 'Adhama' in its quality.

Methods of Manashila shodhana:

- The fine powder of Ashuddha Manashila is taken in a clean khalva yantra and subjected for 7 bhavanas with agastya patra swaras or nimbu swaras or with adraka swaras. Later the fine powder of the drug is dried completely and stored in suitable container as Shudddha Manashila.
- The roughly pounded ashuddha Manashila is poured into a vessel containing enough quantity of sudha jala (lime water) and left for two days. On 3rd day, The drug is washed with warm water, dried completely and stored in suitable container as 'shuddha

Manashila'.

Properties of Manashila:

Purified Manashila will have katu – tikta rasa and snigdha – ushna – guru guna. It exhibits lekhana property. When used judiciously it is useful in kasa and shwas rog. It can be used in agnimandya, kasa and kandu, with wise use, it acts as a good rejuvenator (rasayan). It cures jwara roga, improves the skin radiance (varnya), enhances virility and acts as an antidote for visa (poison) in the body.

MARICHA:

Shweta maricha described in Samhitas and nighantus is obtained by soaking the fruit in water and removing the skin when it becomes less pungent and teekshna. Shigru beeja named as Shwetamaricha by Rajnighantu acts as its pratinidhi.

Actions and uses –

Doshaghnata – vataghna being ushna and kaphaghna being katu, ruksha and teekshna.

Local – The paste acts as counter irritant [Raktotkleshakara – i.e causes local hyperaemia on application] and lekhana. Powder be applied to teeth in krimidanta or gargaling be done by its quatha.

Nasya – Powder should be used as nasya in urdhvajatrugata diseases such as pratishaya, shvasa, moorchha, sanyasi and shirorogas.

Internal – It acts as pramathi, i.e it expels doshas accumulated in sookshma strotasas. Due to the same attributes, it acts as agnideepana also. Hence, should be used in agnimandya, ajeerna, shula, adhmana, etc. Useful in kaphaja ajeerna, and atisara also caused by agnimandya.Used in krimis being krimighna. Should be used in adhmana, etc. Useful in Kaphaja ajeerna, and atisara also caused by agnimandya.Used in krimis being krimighna. Should be used in adhmana and yakritvikaras being Vatanulomana and yakrittottejana, resp.

SAINDHAVA LAVANA :

The term is applied to rock salt, which is regarded as the best of salts.It is found in small white crystalline grains or transparent cubes. It is brownish white externally and white internally. It has a pure saline taste and burns with a yellow flame. According to Ayurveda by the name of lavana, Saindhava lavana is advised. Saindhava Lavana is one of the ingredients in many numbers of Ayurvedic dosage forms which are used internally as well as externally.

Pharmacological Properties:-

In small doses it is highly carminative, stomachic and digestive. It promotes the appetite and assists digestion and assimilation. In large doses it is cathartic; in still larger doses it is

emetic. Rock salt possesses stronger purgative properties. It is given in dyspepsia and other abdominal disorders. To rouse digestion weakened by diarrhoea, rock-salt and yavakshar are given, in convalescence. When heated it is used to foment painful, swollen and such other parts, Rock salt with warm water is used as an emetic. Badavanal churna containing rock salt, long pepper, pippali, cubes, chitraka, ginger and my robalans in equal parts mixed and made into a powder is used in anorexia, flatulence.

PHARMACEUTICAL STUDY

It includes-

a) Collection of Raw material
b) Preparation of Swaras
c) Shodhan of Raw materials
d) Maran of shankha
e) Preparation of shankhadhyanj
f) Shankhadhyanjan.

- Collection of Shankha-

Method- 500 gm of Shankha was purchased at local market and noted its physical characteristics.

- Collection of Ardrak-

Method - 1000 gm Ardrak was collected from local market for the preparation of swaras.

- Collection of Nimbu-

Method - 300 fresh and yellow lemons collected from local market for preparation of Nimbu swaras.

Preparation of swaras:

1.Preparation of Ardrak swaras-

Whitish, yellow coloured Ardrak swaras obtained. Final quantity of swaras is 300 ml.

2.Preparation of Nimbuk swaras

Final collected liquid was measured 2.5 lit. Colour of liquid isyellowish

Raw material shodhan:

Manahshil shodhan

The fine powder of 'asuddha Manashila' was taken in a clean khalva yantra and subjected for 7 bhavanas (tituration) with 'adraka swaras'. Later the fine powder of the drug was dried completely and stored in suitable container as 'sudddha Manashila'.

Shankha Shodhana

Shankha is made into smaller pieces and those pieces are tiedin a cloth like pottalli. It is hanged in a dolayantra containing jambira nimbu rasa as liquid media and subjected for swedana of four yama (12 hours).later the drug in the cloth is washed with water, dried and stored as 'Shuddha Shankha.

Shankha Marana

The Shodhit shankha was taken in khalva

yantra. The pieces of Shuddha shankha are enclosed in a sharava samputa. The samputa was sealed and dried under sun. Later it was subjected for one gajaputa when cool on its own, the drug material inside is taken in khalva yantra and triturated to fine powder form.This powder was again enclosed in sharava samputa, sealed, dried and subjected for another gajaputa.When cool on its own, the while fine powder inside the sharava was collected and stored as shankha bhasma. Like this more two gajaputa was given, appropriate shankha bhasma was prepared.

OBSERVATION & RESULTS:

A. Observations and Results in preparation of Ardrak and Nimbuk Swaras.
B. Observations and Results of shodhana of shankha and Manashila.
C. Observation during Marana of Shankha.
D. Observations and Results of preparation of shankhadhyanjan
E. Observations and Results of tests of raw material, Shodhit material, bhasma.

A) **Ardrak swaras-**

1. Raw Ardrak-

Greenish yellow coloured, Ginger smell present.

2. Swaras-

Whitish yellow in colour, Ginger smell present, white particlesare starting to settle down at bottom.
Obtained Swarasa-300 ml.

B) Nimbu Swaras

Type of procedure: Filtration
Ingredients:
Nimbuk – 300 Water – As required
Equipment's: Knife, steelvessel, juice extractor, cotton cloth, measuring container, etc.

Procedure:

1. Lemons were cut and squeezed to obtain lemon juice.
2. All juice filtered with cotton cloth.

Observation:

1. Final collected liquid was measured 2.5 lit.
2. Colour of liquid is yellowish.

Table no.1 Manahshil shodhan –

Sr .no	Parameter	Result / Day required
1	Time required for practical	7 days
2	Weight of Ashuddha Manashil	250 gm
3	Obtained Manashil	240gm
4	Loss	10gm

Table no.2 Appearance of manhshila-

1	After Shodhan	Reddish yellow incoloure
2	Before Shodhan	Reddish ,bright and shalakshna churna

Table no.3 Raw drug shodhan -Result:

Total time taken: 7 hours

Weight before Shodhana (gms)	Weight after Shodhan a (gms)	Colour Before Shodhan a	Colour after Shodhan a	Touch before Shodhana	Touch after Shodhan a
500	488	Dull white	White	Soft	Rough

Table no. 4 Maran of shankha –

After maran changes in organoleptic characters-

Sr no.	Day	No.of puta (Gajputa)	Shankha bhasma Appearance
1	7th day	1	After giving first puta, the shine of the shankha decreases and it breaks easily into pieces.
2	14th day	1	After giving 2 putas, shankha bhasma becomes more white and shlashna.

3	21th day	1	After three gajaputa this bhasma is converted into whitish fine powder from.It is laghu, shlakshna, mrudu powder form.

Table no.5 Physicochemical – Analysis of shankhadyanjana-

SR. No	**Parameter**	**Result**
1.	Description	Faint orange Colour; Odour Pungent; Taste Biter & Salin.
2.	Loss on Drying	1.096%
3.	pH 1%	11.87%
4.	Total Ash content	66.83%
5.	Acid Insoluble Ash	0.0061%
6.	Water Soluble Extract	10.33%
7.	Alcohol Soluble Extract	8.45%

Table no.6 Organoleptic characters of shankhadyanjana-

Sr .no	Examination of Organoleptic characters	Characteristics
1	Sparsh	Soft
2	Rasa	Kashay
3	Rupa	Light
4	Gandha	Odour pungent

Table no.7 XRF Analysis Of Shankhadyanjana in Element form:-

Sr no	**Component**	**Result**
1	Ca	58.9 mass%
2	As	31.1 mass%
3	S	3.98 mass%
4	Si	2.53 mass%
5	Cl	1.95 mass%
6	Al	0.735 mass%

7	Sr	0.351 mass%
8	K	0.191 mass%
9	Fe	0.133 mass%
10	Sb	0.0573 mass%
11	Sn	0.0349 mass%
12	Zn	0.0349 mass%
13	Cu	0.009 mass%

Table no.8 XRF analysis of Shankhadyanjana in oxide form:-

Sr no	**Component**	**Result**
1	CaO	64.5 mass%
2	As2o3	20.3 mass%
3	So3	7.55 mass%
4	SiO2	4.39 mass%
5	Cl	1.42 mass%
6	Al2o3	1.22 mass%
7	SrO	0.168 mass%
8	K2O	0.190 mass%
9	Fe2O3	0.114 mass%
10	Sb2o3	0.0285 mass%
11	Sn2o3	0.0196 mass%
12	Zno	0.025 mass%
13	Cuo	0.006 mass%

Discussion:

In this topic we collected information from different granthas on Sudhawarga, shankha, shankha shodhana, shankha marana, shankha bhasma pariksha, manashila, Manashila shodhana, marich and saindhav and Shankhadyanajana.

Pharmaceutical review:

Shankha shodhan was done as per rasatarangini 12 / 11.,The media used for shodhan was nimbu swaras it was greenish yellow in colour. This swaras have particular action in purification.After shodhan nimbu swaras turns concentrated whitish yellow in colour.After shodhan of shankha the impurities which were there in ashudha shankha was

removed. Finally, after shodhan the shankha was turn white in colour. After shodhan process of the shankha obtained 480 Gms With the loss 20 Gms. Manhshil shodhan was done as per – rasatarangini 11/114. Manhshil shodhan was done in adrak swaras trituration. Before tituration manahshil is reddish in colour. During tituration of manhashil were turns in orange red colour. After the shodhan process of the manhshil obtained 240 gms with the loss 10 gms.

Analytical Study :pH of this sample is 11.87% it was alkaline in nature.Description of sample is faint orange coloure, odour pugent taste.Percentage of loss on drying is 1.096 %.Percentage of Ash content is 66.83%.Percentage of Acid insoluble Ash is 0.0061%. Percentage of water-soluble extract is 10.33%.Percentage of alchohol soluble extract is 8.45. Calcium 58.9 mass% is present in this preparation due to shankha is compound of sudhha varga. Arsenic 31.1 mass% is found in that prepration because Manashila is one of the most important somal (malla varg) compound. Sulfur 3.98 mass % presents this preparation due to arsenic disulphide.Silicon 2.53mass%. Chlorine1.95 mass%. Aluminium 0.735mass%.Strontium 0.351 mass % it is an alkaline earth metal presentdue to handling error.Potassium 0.191 mass % .Iron is 0.133 mass % may be due stainless-steel pot used inshankha Shodhan.

Conclusion:

There are so many formulations available in the text for the treatmentof netra roga. Shankhadhyanjan is one of the best anjana kalpa formulations of bhaishajya kalpana. It is microfine powder of the selected herbal or mineral drugs.In shankhadhyanjan shankha bhasma is added due to reduce the action of Maricha is added in kasthaushadhi because it enhances the kaphaghna, krumihar, lekhana karma.The study of literature review is must to understand the basic principle. Involved in the prepration of drug, review of the modern aspect of drug is suggestive of the work done by ancient Acharya was scientific. The raw material for the preparation of drug was selected as per mentioned grahya lakshanas and analysed in laboratory.The result of analysis shows that the raw material selected was of good quality. It concludes that although a criterion for raw material selection is subjective, but it is of great significance.

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