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ORIGINAL RESEARCH ARTICLE

Preliminary Analytical Study of *Shramaharagana* Granules

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ABSTRACT

AcharyaCharak (*Sutra* Ch. 4/14) has narrated *PanchaashnMahaakashaaya* in *Shadvirechanashataashritiya*, 40th in the series is *Shramaharagana*. Based on textual indications and recent pharmacological studies, the drugs were selected for studying their clinical effects on *Putraghni yoni vyaapada* (Habitual abortion) and Toxoplasmosis positive gravid patients. An *anubhoota* formulation of *Shramahara*granules was prepared. Before commencing the clinical trial, the *yoga* was studied analytically for drug standardization.

Key words: *MahaaKashaaya*, *Shramaharagana*, Granules, Analytical study, *Putraghni yonivyaapada*, Toxoplasmosis, Habitual abortion.

INTRODUCTION:

Ayurvedic texts have discussed and emphasized on drug standardization and quality control. The physician was responsible for G.M.P. Ayurvedic nomenclature of herbs was based upon their habitat, morphology, taste, colour and medicinal uses e.g. the name *Madhurasa* of *Draaxaa* (*Vitisvinifera* Linn.) denotes its sweet taste hence sugar content, similarly *Parushaka* (*Grewiaasiatica* Linn.) means 'that which fills up', 'that which takes care of', denotes its action on body. *Shrama* means 'feeling of tiredness'. The property which relieves this feeling is called *Shramahara*. Charak has classified 10 drugs possessing this property under*Shramaharagana*[1].

With increasing global health awareness, acceptance of Traditional and Indian system of medicine which is based on plant products, there is an increased demand for herbs. This has created need for proper identification and standardization of herbs. World Health Assembly (W. H. A. 42 – 43, 1989) has emphasized on standardization of herbs according to new international standards. Assessment ofphysico-chemical values of Ayurvedic herbs give a scientific basis that helps make Ayurved acceptable to the scientific community. The present study was carried out to provide standard parameters of preliminary identification, for quality control of granules prepared from the ten *Shramaharagana* drugs.

MATERIALS AND METHODS

The Study was undertaken at the Analytical laboratory of I. P. G. T. & R., G. A. U.,Jamnagar.

Collection and authentication of plant material:

All the drugs were collected from Jamnagar district, Gujarat. Plants were identified and authenticated by comparing the characters with different floras and standard reference books at Pharmacognosy laboratory of the Institute.

Preparation of *Shramaharagana* granules:

Fresh fruits (with seeds) of Vitis*vinifera*Linn.,*Grewiaasiatica* Linn.were made in to paste. Seeds and seed pulp of fresh fruits of *Punicagranatum* Linn.were made in to paste. Fruit pulp of *Zizyphus jujube* Lam. was made in to paste. Deseeded fruit pulp of *Phoenix sylvestris*Roxb., dried fruits of *Ficuscarica* Linn., seeds of *Buchanamialanzan*Spreug.were made in to paste individually. Powder of husked dried fruits of *Hordeumvulgare*Linn.,*Oriza sativa* Linn.were dry roasted and to the mixture was added fresh stem with internode juice of*Saccharumofficinarum* Linn.. The mixture was boiled up to its becoming consistent. It was then put in to the dryer. Granules were made easily. No any preservatives were added.

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The *yogaShramahara* granules prepared at the pharmacy of G. A. U., Jamnagar was studied for organoleptic characters viz. colour, taste, odour, shape and physico – chemical parameters like: pH value, loss on drying, water soluble extract, alcohol soluble extract etc. preliminary qualitative tests were also done for the detection of primary and secondary metabolites.

Table 1: *Shramaharagana* drugs

S. No	*Sanskrit* name	Latin name	Family
1	*Draaxaa*	*Vitisvinifera* Linn	Vitaceae
2	*Kharjura*	*Phoenix sylvestris*Roxb	Palmate
3	*Priyaala*	*Buchanamialanzan*Spreug	Anacardiaceae
4	*Badara*	*Zizyphus jujube* Lam	Rhamnaceae
5	*Daadima*	*Punicagranatum* Linn	Moraceae
6.	*Phalgu*	*Ficuscarica* Linn.	Moraceae
7.	*Parushaka*	*Grewiaasiatica* Linn	Tiliaceae
8	*Ikshu*	*Saccharumofficinarum* Linn	Graminae
9	*Yava*	*Hordeumvulgare* Linn.	Graminae
10	*Shashtika*	*Oriza sativa* Linn.	Graminae

Table 2: Part used and quantity of drugs taken for manufacture of *Shramaharagana* granules

S. No	Drug	Part used	Quantity taken
1	*Draaxaa*	Fruit pulp	1 kg
2	*Kharjura*	Fruit pulp	1 kg
3	*Priyaala*	Seed	1 kg
4	*Badara*	Fruit pulp	1 kg
5	*Daadima*	Fruit with seed	1 kg
6	*Phalgu*	Fruit with seed	1 kg
7	*Parushaka*	Fruit with seed	1 kg
8	*Ikshu*	Stem with inter node	17 liters
9	*Yava*	Seed	1 kg
10	*Shashtika*	Seed	1 kg

OBSERVATION AND RESULTS

Organoleptic:

The granules are reddish brown, sticky and heavy. Taste sour with dominant taste of drugs *Parushaka*, *Daadima*, *Phalgu* and *Ikshu*. Dominant smell is of *Parushaka*, *Phalgu* and *Ikshu*.

Microscopic:

- Starch grains: (**Fig 1**)
- Brownish coloured content: (**Fig 2**)
- Yellowish coloured content: (**Fig 3**)
- Spiral vessels: (**Fig 4**)
- Epidermal cells with Stroma: (**Fig 5**)
- Fibres: (**Fig 6**)
- Oil globules: (**Fig 7**)
- Rosette Crystals: (**Fig 8**)

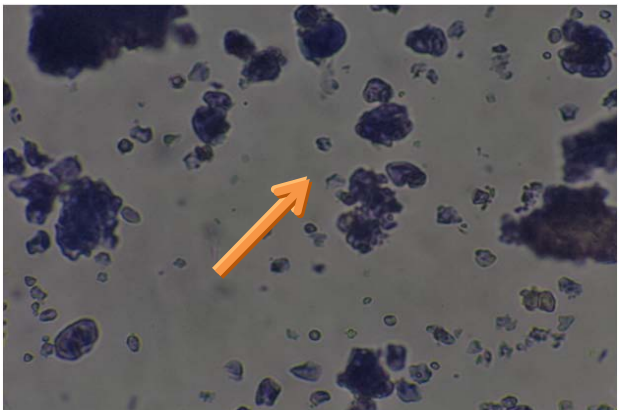

Fig 1: Starch Grains

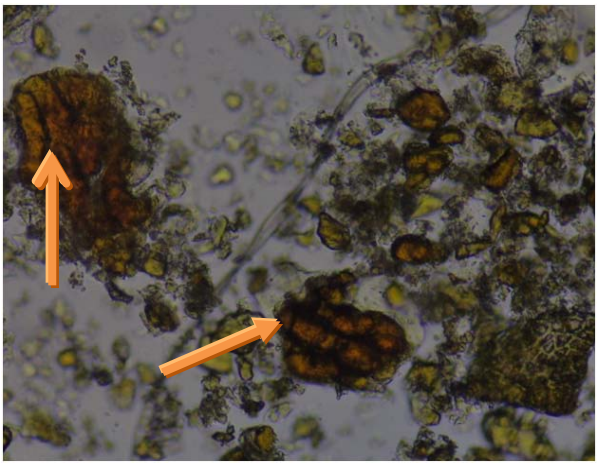

Fig 2: Brownish Colored Content

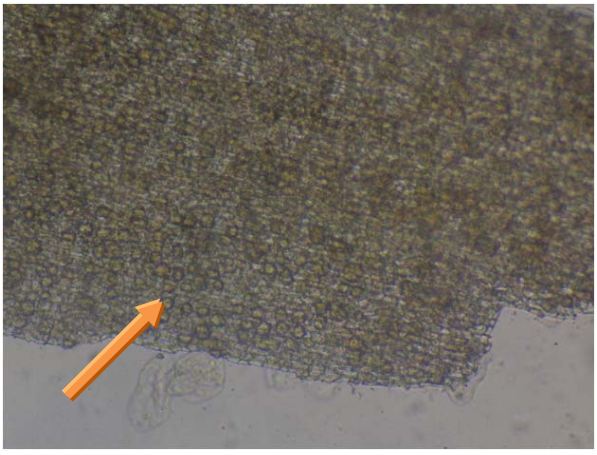

Fig 3: Yellowish Colored Content

Fig 4: Spiral Vessels

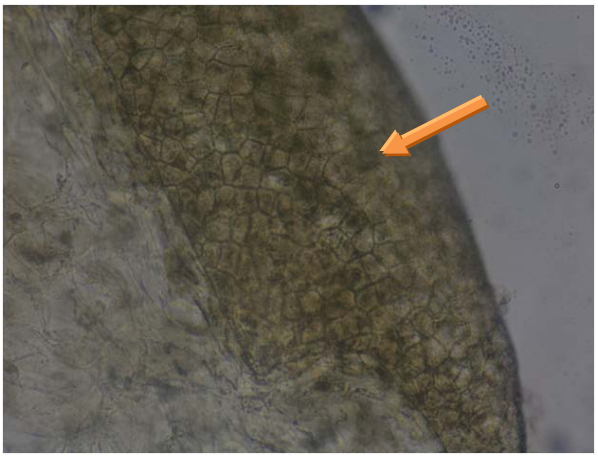

Fig 5: Epidermal cells with Stroma

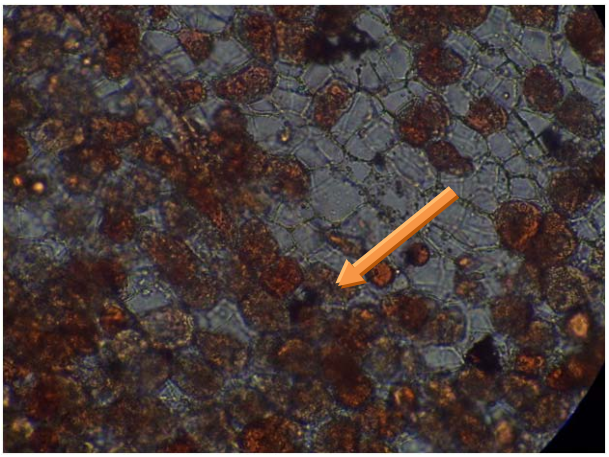

Fig 7: Oil Globules

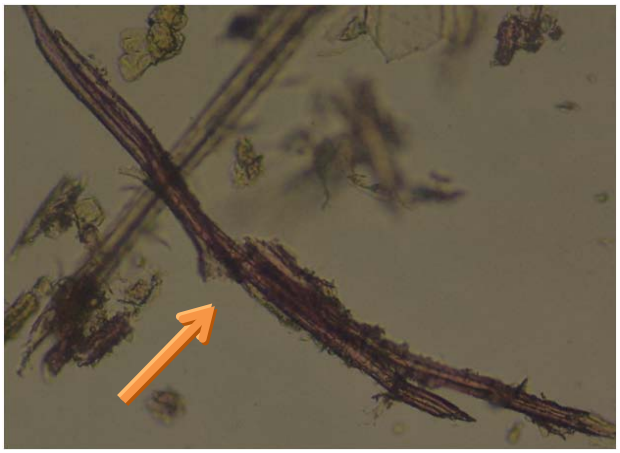

Fig 6: Fragment of Fibers

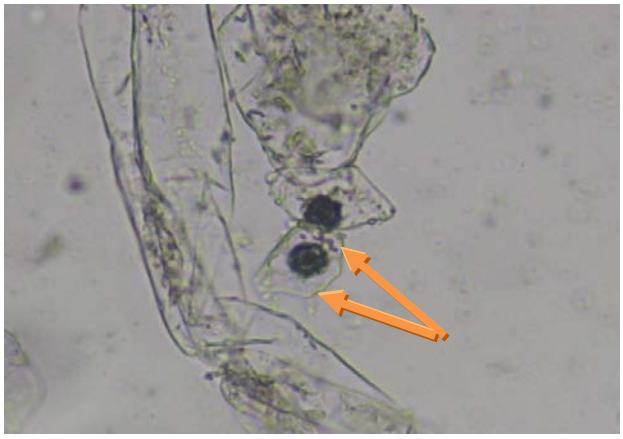

Fig 8: Rosette Crystals

Results of Qualitative Tests:

Table 3:Preliminary Qualitative Analysis Results
Material: Alcoholic extract of dried fruit powder

S. No	Test / Reagent	Functional group	Observation	Result
1	Dragendorff's reagent	Alkaloids	Orange Brown ppt.	+ve
2	Wagner's reagent	Alkaloids	Reddish brown ppt.	+ve
3	5% fecl3	Tannin & PhenolicCompd.	Deep blue black colour	+ve
4	Gelatin solution	Tannin & PhenolicCompounds	White ppt.	+ve
5	Lead acetate solution	Tannin & Phenolic compounds	White ppt.	+ve
6	Biuret test	Protein	Violet or pink colour appears	+ve
7	Molisch's test	Carbohydrate	Violet ring observed at the junction	+ve
8	Fehling's test	Carbohydrate	First yellow, then brick red ppt. observed	+ve
9	Salkowoki	Steroids	Greenish yellow fluorescence	+ve
10	Liebermann-buchard	Steroids	First red, then blue and finally green colour appears	+ve
11	Lead Acetate	Flavonoids	Yellow ppt.	+ve
12	Shinodoi test	Flavonoids	Pink colour observed	+ve
13	Solution+ NH4OH + Cad. Chloride	Vit. C(Ascorbic acid)	Gelatinous ppt.	+ve
14	Test solution + 5 ml water + 5% w/v Solution of Sodium nitropusside and 2 ml of dil. NaOH Solution. Add HCl	Vitamin C (Ascorbic acid)	Yellow colour turns blue	+ve
15	Test Solution + 2% w/v 2,6 dichlorophenelindophenol	Citric acid	Decolorized	+ve
16	2 ml Test solution + One drop NH_4OH + excess Cadmium Chloride solution	Citric acid	Gelatinous ppt.	+ve
17	Molish's test	Sugars	Violet ring is formed at the junction	+ve
18	Sudan Red III reagent	Fats and oils	Oil globules get red	+ve

Table 4:Analytical Study

S. No	Physico – chemical parameters	Results
1	Ash value	2.24
2	Loss on drying	1.90
3	Alcohol soluble extractive	56.80 % w/w
4	Water soluble extractive	56.29 % w/w
5	pH value	5.5
6	Sugar content Total sugar	44.36 w/w %
	Reducing sugar	42.12 w/w %

DISCUSSION

The *anubhoota yoga Shramaharadashemaani* granules was studied for organoleptic characters, microscopic characters and subjected to Physico – chemical analysis for identification, further study and utility. Pharmacognostical and Phytochemical evaluation techniques were utilized. The results provide scientific data useful for identification and

authentication of the drug. Morphologically the granules are reddish brown, sticky, heavy compared to their volume, sweet – sour taste. The pH is 5.5 which supports its taste. Oil content is supported by its stickiness. *Yoga* is both water and alcohol soluble due to the respective soluble metabolites. Spiral vessels, Epidermal cells with Stroma, Starch grains, Stone / Sclereids, Fibres located serve as important microscopic diagnostic characters.

CONCLUSION

Pharmacognostical and Phytochemical evaluation of ShramaharaDashemani granules (anubhoota yoga) provides scientific data that will be useful in preliminary identification and authentication of the yoga. Epidermal cells with Stroma, Fibres, Spiral vessels, Starch grains, Stone / Scerids serve as important microscopic diagnostic characters.

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