



PHYSICO-CHEMICAL EVALUATION OF KASAHAR CHOORNA FROM CHARKOKTA MAHAKASHAY

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ABSTRACT

Medicinal plants mentioned in Charaka Samhita many centuries ago are recorded with complete understanding of various dimension reflected to their usage. Mahakashaya is important source from which we can get various drugs options for day to day practice and can use it effectively in simple manner. Kasahar Dashemani is recommended by Charak in the management of Kasa (cough) Vyadhi (disease). The aim of the present study was to investigate the presence of physicochemical & preliminary phytochemical test of Kasahar Dashemani Choorna (Powder). Pharmacognostic studies of Ayurvedic compound formulation i.e. Choorna (Powder), Kwath (Decoction), etc. ensure standardization parameters which will help and prevents adulterations. Such studies will help to ensures reproducible quality of herbal

products which will lead to safety and efficacy of natural products. The present investigation reveals standardization of Kasahar Dashemani Choorna which includes determination of loss on drying, total ash, acid insoluble ash, water extractives, alcohol extractives and T.L.C. The study divulges presence of certain chemical constituents like carbohydrates, saponins, proteins, alkaloid, glycosides, terpenoids, tannin, steroids, flavonoids.

KEYWORDS: Kasahar Choorna (Powder), Physicochemical, Phytochemical analysis.

INTRODUCTION

Medicinal plants mentioned in Charaka Samhita many centuries ago are recorded with complete understanding of various dimension reflected to their usage. In this Samhita several

plants have been described and classified under different heads and therapeutic utility of these plants have also been described in detail. In Charak Samhita Sutrasthan adhyaya four i.e. Shadvirechaneeyashratashateeya adhyaya contains fifty Mahakashaya, each containing ten drugs which are grouped together. Kasahar Mahakashaya is one of them which is useful in the treatment of Kasa (cough) Vyadhi (Disease). Kasahar drugs are Draksha, Abhaya, Amalaki, Pippali, Duralabha, Shrungi, Kantakari, Vruscheer, Punarnava & Tamalaki.^[2,3,4]

In present era unhealthy and unwholesome diet habits, change in lifestyle, increased pollution leads to increased Kasa (cough) Vyadhi (Disease). So it is necessary to give herbal options for effective treatment of Kasa (cough) Vyadhi (Disease). For that purpose to have the authentication of Kasahar Choorna (Powder) and physicochemical analysis is beneficial.

The quality control of compound formulation is important in justifying their acceptability in today's system of medicine. Administration of drug in various dosage forms provides an opportunity to the physician to choose better option. Various dosage forms have been described in Ayurveda, one among them is Choorna (Powder). Research work on compound formulation of Kasahar Mahakashaya in the form of Choorna (Powder) is not found but references of single drug standards, are stated in API. Therefore this physicochemical evaluation of Kasahar Choorna (Powder) will be definitely helpful as a standard parameter for further experimental & clinical study.

Authentic & scientific reason of its uses will comprehend its correlation with active constituents of dravya (drug) which acts in respiratory tract infection. It will be enlighten in future clinical study. This study will be definitely become pioneer work of Kasahar Choorna (Powder) which will be helpful for the researchers & practitioners in treatment of Kasa (cough) Vyadhi (Disease).

MATERIALS AND METHODS

Table 1: Drugs of Kasahar Dashemani with different useful parts.^[1,5,6,7,] [Fig.1]

No.	Drug name	Family	Scientific name	Useful part
1	Draksha	Vitaceae	<i>Vitis vinifera</i> Linn.	Fruit
2	Abhaya	Combretaceae	<i>Terminalia chebula</i> Retz.	Fruit
3	Amalaki	Euphorbiaceae	<i>Phyllanthus emblica</i> Linn.	Fruit
4	Pippali	Piperaceae	<i>Piper longum</i> Linn.	Fruit & Root
5	Duralabha	Zygophyllaceae	<i>Fagonia cretica</i> Linn.	Panchanga (Whole plant)
6	Shrungi	Anacardiaceae	<i>Pistacia integerrima</i> Stewart	Gall(shrungakar Kosh)

			ex Brandis	
7	Kantakari	Solanaceae	<i>Solanum virginianum</i> Linn.	Panchanga (Whole Plant)
8	Vruscheer	Aizoaceae	<i>Trianthema portulacastrum</i> Linn.	Root,Seed, Panchanga (Whole plant)
9	Punarnava	Nyctaginaceae	<i>Boerhavia diffusa</i> Linn.	Root, Seed, Panchanga (Whole plant)
10	Tamalaki	Phyllanthaceae	<i>Phyllanthus fraternus</i> G. L. Webster	Panchanga (Whole plant)

Collection of Drugs

Following drugs were procured from Pune market (Hari Parshuram Aushadhalaya Pune).

Draksha, Abhaya, Amalaki, Pippali, Duralabha, Shrunji, Kantakari & Punarnava

Following two drugs were collected from Pune area.

Vruscheer – (Whole Plant) from the riverbed of Mula & Mutha Pune.

Tamalaki – (Whole plant) from the Bharati Vidyapeeth campus Katraj Dhankawadi Pune.

Authentication of samples

Table: 2 Authentication of plants was done at Agharkar Research Institute Pune.

No.	Name of the drug (Raw)	Voucher no.
1	Draksha	16-167
2	Abhaya	16-168
3	Amalaki	16-169
4	Pippali	16-170
5	Karkatshrunji	16-171
6	Duralabha	16-172
7	Kantakari	16-173
8	Punarnava	16-174
9	Vruscheer	16-248
10	Tamalaki	16-155

Drying of drugs

Roots of Vruscheer & Panchanga (whole plant) of Tamalaki were shed dried. After complete drying for 15-20 days.

Storage of Drug

All the samples were packed in air tight plastic bags after complete drying to avoid contamination. Plastic bags were kept at cool & dry place to preserve its shelf life.

Preparation of Choorna [Fig. 2]

Powder of each drug is made separately and then mixed together to prepare Kasahar Choorna.

Choorna was prepared by standard method given in Sharangdhar Samhita.^[8]

Mesh size - B.S.S. – 100 mesh size of powder was prepared by using grinder.

ANALYTICAL STUDY

Organoleptic study and physicochemical analysis

The compound formulation was studied for organoleptic characters like colour, taste & odour using sensory organs of our body.

Physicochemical analysis of Kasahar Choorna was carried out at Indian Drug Research Association & Laboratory Pune (IDRAL).

Standards for analysis were followed as per given in API for compound formulation.^[7]

Preliminary Phytochemical analysis of Kasahar Dashemani Choorna [Fig.3]

Preparation of plant extracts -Hot water extraction - 5gm of dried finely powdered material was taken in a beaker and 200ml of distilled water was added. The mixture was heated on a hot plate with continuous stirring at 30°-40°C for 20 minutes. Then the water extract was filtered through filter paper and the filtrate was used for the phytochemical analysis. The water extract was kept in refrigerator when not in use.

OBSERVATIONS, RESULTS AND DISCUSSION

Table 3: Table showing organoleptic characters of Kasahar Choorna.

Test	Results
Colour	Yellowish Green
Taste	Pungent & Astringent
Odour	Characteristic

Table 4: Table showing physicochemical parameters of Kasahar Choorna.

No	Name of the Test	Result
1	Description	Yellowish green, very fine, free flowing powder
2	Loss on drying	7.06 %
3	Total ash	8.94 %
4	Acid Insoluble Ash	2.93 %
5	Water Extractives	33.51 %
6	Alcohol Extractives	14.84 %

Table 5: Table showing TLC screening of Kasahar Choorna.

Thin Layer Chromatography	Results
<ul style="list-style-type: none"> Extraction Adsorbent used Mobile phase 	Alcoholic Extract Silica gel 60 F254 Toluene: Ethyl Acetate (9:1)
<u>Detection</u> <ul style="list-style-type: none"> UV 254 nm 	Five spots Rf: 0.08, 0.11, 0.23, 0.28, 0.62 (All Blue)
<ul style="list-style-type: none"> UV 365 nm 	Four spot Rf: 0.08, 0.11 (Both Yellow) 0.23 (Orange) 0.28 (Blue)
<ul style="list-style-type: none"> Iodine Vapours 	Six spots Rf: 0.06, 0.14, 0.23, 0.31, 0.62, 0.91 (Yellow to Orange)

Table 6: Table showing preliminary qualitative phytochemical estimation of Kasahar Choorna (Powder).

No.	Test Name	Results
1	Carbohydrates	++
2	Saponins	++
3	Proteins	++
4	Alkaloid	++
5	Glycosides	+
6	Terpenoids	+
7	Tannin	++
8	Steroids	+
9	Flavonoids	++

(+) Present in minor amount; (++) present in moderate amount



Vitis vinifera Linn.-Fruit



Terminalia chebula
Retz.-Fruit



Phyllanthus emblica Linn. -
Fruit



Piper longum Linn.-
Fruit



Fagonia cretica Linn -
whole plant



Pistacia integerrima Stewart
Ex. Brandis - Galls



Solanum virginianum
Linn.- whole plant



Trianthema portulacastrum
Linn. - Root



Fig.1: Kasahar Dahsemani Drugs.



Fig.2- Kasahar Choorna (Powder).

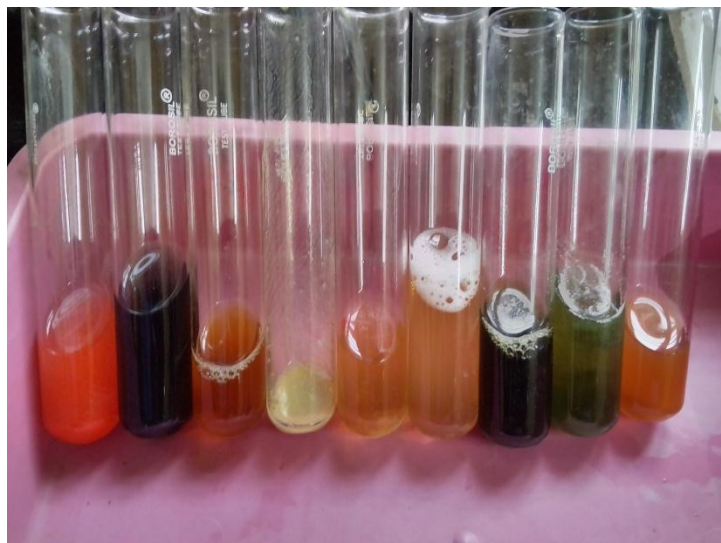


Fig.3: Preliminary phytochemical analysis of Kasahar Choorna.

Kasahar Choorna is yellowish green in colour, pungent & astringent in taste and has characteristic odour.

Physicochemical parameters are shown in Table: 4 & TLC screening values are tabulated in Table: 5.

In present study all the active components of Kasahar Choorna were tested qualitatively by employing specific chemical tests. The results of phytochemical tests indicate the presence of Saponins, Carbohydrates, Proteins, Alkaloid, Tannin, flavonoid, Glycosides, Terpenoids & steroids. [Table: 6]

These values are used as standards of Kasahar Choorna for further research work.

CONCLUSION

The preliminary phytochemical screening of Kasahar Choorna revealed the presence of Saponins, Carbohydrates, Proteins, Alkaloid, Tannin & Flavonoid in moderate amount and presence of Glycosides, Terpenoids & Steroids in minor amount which may be effective in the treatment of Kasa Vyadhi.

The current study will serve to become ready reference for identification & quality standards for physicochemical and preliminary phytochemical analysis of compound formulation of Kasahar Choorna. This preliminary information can be used as standard in future.

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