Pharmaceutical Study of Patoladi kashaya Ghanvati.

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ABSTRACT

Bhaishajya Kalpana is a specialized branch of *Ayurveda* concerned with pharmaceutical processing and the development of stable, effective dosage forms. *Kwatha Kalpana* (decoction) is a classical formulation widely used in clinical practice, but its limitations such as poor palatability, short shelf life, and difficulty in dose fixation leads to its modification into *Ghana Kalpana* (solidified extract). Patoladi Kashaya is a well-established *Ayurvedic* formulation mentioned for its efficacy in *Vatrakta* and various *Pittaja Vyadhis*. In the present study, *Patoladi Kashaya Dravya (Yukti Churna*) and *Patoladi Ghanvati* were prepared according to classical references and compared on pharmaceutical parameters. Results showed that both formulations met the standard API limits, ensuring quality, safety, and efficacy.

KEYWORDS

Patoladi Kashaya, Patoladi Ghanvati, Ghana Kalpana, Yukti Churna, Pharmaceutical Standardization.

INTRODUCTION

Panchvidha Kashaya Kalpana[1] are fundamental preparations in *Ayurvedic* pharmaceutics from which various other preparations are attained. *Kwatha Kalpana* is one of the significant, very effective and widely used dosage form. This dosage form is acquired by boiling the herbal drugs with water in specific proportion and is reduced to desired quantity.[2]Due to bitterness in taste, palatability, feasibility, short shelf life, inconvenience in its preparation, transportation etc., *Kwatha ghana* is preferred over *Kwatha*. *Ghana* (an *Upkalpana* of *Kwatha*) is a dried aqueous extract prepared by evaporating all the aqueous portion from the *Kwatha*.[3] It is form of *Kwatha Kalpana*, in which *Kwatha* is modified into concentrated dosage form. It is obtained by heating *Kwatha* till it comes in semi-solid state and then it is dried to solid form. *Ghana Kalpana* is more palatable and potent, longer shelf life, high therapeutic efficacy and accepted by all age groups. *Kwatha Kalpana* is widely used dosage form but it has also some disadvantages: -Like as difficulties in ensuring quality control of herbal ingredients, time and inconvenience required during its preparation, transportation, storage and is difficult to take in fix dose. These obstacles lower the compliance and may impede with treatment. So it is need of the

hour to make advancement in its dosage form. Considering all these issues, so there is need of modifications in *Ayurvedic* Ancient dosage forms. Because most of the ancient dosage forms are not easily Palatable, not easy to carry, having short shelf life, not simple to dispense and not good in appearance. So we should modify *Ayurvedic* drugs with increasing therapeutic utility and potency. Hence, for Globalization of *Ayurveda*, these kinds of innovations are needed. So, in the present study the effort has been made to prepare *Ghanvati* of *Patoladi Kashaya*. The study aims at developing more potent, efficient and palatable formulation.

AIMS AND OBJECTIVES

1. To prepare *Patoladi Kashaya Dravya (Yukti Churna)* and *Patoladi Ghanvati* as per *Sharangdhara Samhita*

2.To evaluate and compare their organoleptic and physico-chemical parameters.

3. To establish preliminary standardization benchmarks for *Patoladi* formulations.

MATERIALS AND METHODS

Procurement of Raw Drugs

All raw drugs were authenticated and procured from a GMP-certified Ayurvedic pharmacy with Certificate of Analysis.

Composition of Patoladi Kashaya Dravya (Yukti Churna)

INGRIDIENDS OF *PATOLADI KASHAYA GHANVATI* MENTIONED IN THE TABLE BELOW

NAME	BOTANICALNAME	FAMILY	PROPORTION	PART USED
PATOLA PATRA	Trichosanthesdioca	Cucurbitaceae	1 part	Leaf or part available.
KUTAKI	Picorhiza kurroa	Plantaginaceae	1 part	Roots
GUDUCHI	Tinospora cordifolia	Menispermaceae	1 part	Stem
SHATAVARI	Asparagus racemosus	Asparagaceae	1 part	Roots
AMLA	Emblica officanallis	Euphorbiaceae	1 part	Fruit
HARITKI	Terminalia bellerica	Combretaceae	1 part	Fruit
BAHEDA	Termenalia chibula	Combretaceae	1 part	Fruit

Method of Preparation

Patoladi Kashaya Ghan Vati will be prepared by using herbal ingredients as mentioned in *Sharangdhar Samhita*. The ingredients will be taken in equal amount and crushed to coarse powder. This coarse powder will be soaked in sixteen times of water and kept overnight. Then in morning it will be boiled on *Mandagni* and reduced to one eighth (as mentioned in AFI and other classical texts) [3]. After this process *Kwath* will be filtered and reboiled on *Mandagni* till it attains semisolid state which will be then modified into *Vati* of 500 mg each.

Step 1: Preparation of *Yukti Churna*

- Raw drugs were separately cleaned, dried, and powdered to coarse consistency (*Yavkuta Churna).*
- Passed through mesh no. 8, mixed thoroughly, and stored in airtight containers.

Step 2: Preparation of *Patoladi Kashaya*

- 1 part of *Yukti Churna* was soaked overnight in 16 times water.
- Boiled on *Mandagni* until reduced to 1/8th.
- Filtered through fourfold cloth → obtained *Kwatha.*

Step 3: Preparation of *Ghana*

Equipments used in making patoladi Kashaya ghana.

1. *Stainless steel vessel*
2. *Stainless steel ladle*
3. *Gas stove*
4. *Thermometer*
5. *Steel tray*

- *Kwatha* was reheated with continuous stirring till semisolid (Ghana) consistency was reached.
- Spread on trays smeared with ghee, dried under sunlight.

Step 4: Preparation of *Patoladi Ghanvati*

- The dried Ghana was pounded and granulated.
- Rolled into 500 mg tablets (Vatis).
- Dried in shade and stored.

Precautions Taken:

- Controlled temperature (< 90°C) to avoid loss of active principles.

- Continuous stirring during heating to prevent sticking.

- Airtight storage to avoid moisture contamination.

Equipments used

1. *Weighing machine*
2. *Electric pounding machine*
3. *Pill making machine*
4. *Steel trays.*

Procedure

1. Prepared *Yavkuta Churna* was taken in a big stainless steel vessel and kept soaked in 16 times = 400 litres water approx. (as per principle *Shodasha gunam jalam* for *Kathina dravya*)[4] overnight.
2. The next morning *Kwatha* material was heated on *Mridu Agni* with continuous stirring without covering the vessel.
3. The temperature was checked with the help of thermometer and was maintained between 85- 90°C.
4. Constant mild heat was applied to facilitate evaporation until it was reduced to 1/8th of initial quantity.
5. When the water-soluble phytochemicals of the *Kwatha dravyas* were extracted completely in water (*Gatarasa*)[5] and the *Kwatha dravya* became *Neerasa* then it was filtered through a fourfold clean cotton cloth. Filtered *Kwatha* was then collected in a vessel for further procedure.

Precautions

1. Wash all equipments properly before use.
2. *Yavkuta Churna* or coarse powder of the ingredients was taken for the preparation of *Kwatha* (size below mesh no. 8). Boiling was done on *Manda Agni* so that water evaporates slowly and this enables the complete extraction of phytochemicals and active pharmacological ingredients present in crude drugs. Also, high temperature can disintegrate some of the thermolabile active constituents.
3. Temperature was maintained below 100°C.
4. During boiling process liquid was frequently stirred to check frothing and liquid out of the vessel.
5. Continuous stirring was done to prevent sticking of the material at the bottom of the vessel. It also facilitates proper homogenous treatment to substances**.**

General observations during preparation of *Patoladi kwatha*

1. *Kashaya Yavkuta Churna* became soft and swollen when kept soaked overnight (12hrs)
2. During boiling of *Kwatha* little frothing was observed.
3. Evaporation started at 70°C which aggravated on stirring.

4. The maximum temperature during boiling stage was found between 90-95°C.
5. The menstruum was brown in colour during initial stage which gradually turned to dark brown.
6. The colour of prepared *Kwatha* was dark brown.
7. The taste of the *Kwatha* became bitter at the end and had the characteristic smell.
8. It was observed that *Kwatha* gradually became thicker in consistency and the material became softer.

RESULTS

Table 1: Results of *Patoladi Kwatha.*

Sr. no.		Patoladi Kashaya
1	Initial quantity of *Kwatha Churna* taken (kg)	7 kg
2	Total quantity of water taken (Lt.)	120 l
3	Total time for soaking	12 hrs
4	Temp. during preparation of *Kwatha* (after 1 h)	80-90°C
5	Colour	Brown

OBSERVATIONS AND RESULTS

General Observations

- Soaking: Swelling and softening of coarse powder observed.
- *Kwatha:* Brown in color, bitter in taste, aromatic smell.
- *Ghana*: Dark brown, sticky during final stage.
- *Ghanvati*: Blackish-brown round tablets, smooth margins.

Organoleptic Characteristics

Parameters	*Patoladi Kashaya*	*Patoladi Ghanvati*
Colour	Brownish	Blackish Brown
Odour	Characteristic	Characteristic
Taste	Bitter, *Kashaya*	Bitter, *Kashaya*
Touch	Coarse powder	Hard, smooth tablets

DISCUSSION

Patoladi Kashaya is one of the widely used formulations for *Pittaja Vyadhi* due to its Tikta *Rasa Pradhana dravyas* like *Patola, kutki, Guduchi, amla, harad, baheda* ,etc. The *Kashaya* form ensures maximum extraction of active principles but suffers from drawbacks like perishability and difficulty in dose fixation. *Ghana Kalpana* overcomes these issues by providing:

- Increased shelf life
- Better palatability and portability
- Accurate dose fixation
- Ease in administration and compliance

The present study demonstrates that *Patoladi Ghanvati* retains the essential qualities of *Patoladi Kashaya* while improving convenience. Analytical parameters such as Ash values, LOD, and Disintegration time were all within API limits, suggesting safety and quality.

CONCLUSION

The comparative pharmaceutical and analytical study of *Patoladi Kashaya Dravya* (*Yukut Churna*) and *Patoladi Ghanvati* confirms that both formulations meet standard quality parameters. *Patoladi Ghanvati* emerges as a more practical dosage form with improved stability and patient compliance while retaining the therapeutic essence of *Patoladi Kashaya*. Standardization protocols developed in this study can be used for large-scale pharmacy preparations.

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ANNEXURE

Raw drugs for Patoladi Kashaya Ghanvati : Figure

1.patol patra, 2.shatavar 3.kutki, 4.Haritaki, 5. Amla 6.Baheda 7.Guduchi .

ALL RAW DRUGS ARE POWDERED AND THEN BOILED WITH 16 TIMES OF WATER UNTIL 1/8 OF THE REMAINING. THE KWATHA THUS FORMED THEN FILTERED WITH CLOTH TO REMOVE ALL IMPURATIES. THE KWATHA THUS OBETAINED REBOILED UNTIL IT BECOME THICKER IN CONSISTENCY WHICH IS KNOWN AS GHANA

THE GHANA THUS OBETAINED BOILED UNTIL ALL WATER CONTENT VAPORISES AND BOILED UNTIL IT BECOMES THICK ENOUGH TO FORM VATIES (TABLETS)

TABLETS CAN BE FORMED WITH THE HELP OF PILL MAKING MACHINE.