



Review Article

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A REVIEW ON KWATHA EXTRACT SACHETS: A PRESERVATIVE FREE AND PATIENT FRIENDLY ALTERNATIVE DOSAGE FORM OF THE TRADITIONAL KWATHA

Emy S Surendran ^{1*}, Sinimol T P ¹, Sreedeepti G N ²

¹ Research Officer (Ay.), Regional Ayurveda Research Institute (RARI), Thiruvananthapuram, Kerala, India

² Research Officer (Ay.), National Ayurveda Research Institute for Panchakarma, Cheruthuruthi, Kerala, India

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*Corresponding author

E-mail: emy.ssurendran@gmail.com

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ABSTRACT

Ayurveda is a science with deep insight and keen observation. It is rich in an exquisite collection of medicinal preparations suitable in diverse conditions. *Kwatha kalpana/kwatha* (decoction) which is a highly significant and an inevitable form of medication in almost all prescriptions by an Ayurvedic physician is the primary subject of this study. It is a water-based preparation to extract active compounds from medicinal plant materials. The classical textbooks of Ayurveda, insists on the administration of *Kwatha* immediately after preparation, while it is warm. But it is quite difficult to dispense this dosage form fresh. Thus, a probable solution for this is to modify this dosage form in such a way that it can be stored for a considerable time without losing its efficacy. The pharmacies have thus devised a method such that the liquid *Kwathas* can be preserved as per modern techniques to preserve food, i.e., by using class II chemical preservatives. At present various other methods are also available to dispense *Kwathas*. They are: *kashaya* tablets, *kashaya choorna* (coarse powder), *Kashaya Sukshma choorna* (fine powder) etc. Each of these modifications have their own merits and demerits. Hence in this study details of the *kwatha* converted into extract form are being discussed. *Kwatha* prepared in the usual method can be spray powdered to prepare the extract which is to be dried at a particular temperature. Then it may be packed in airtight containers in a dehumidified atmosphere. Patients can prepare *kwatha* by dissolving the extract in warm water. The advantages of this dosage form are that it is preservative free, there is no gastric irritation, faster absorption, easy to prepare and easy to carry.

Keywords: Ayurveda, extract, *kwatha*, prescription, preservatives

INTRODUCTION

Ayurveda is a science with deep insight and keen observation. It is divided into eight branches. *Bhaishajya Kalpana* is an integral part of each of these eight branches. The aspects about procurement of raw materials, preparation of medicines, their dose, shelf life, mode of dispensing and time of administration are all brilliantly explained in *Bhaishajya Kalpana*. It is rich in an exquisite collection of medicinal preparations suitable in diverse conditions. The physician just has to choose the right medicinal recipes appropriate for the condition of the patient. A properly prepared medicine is the greatest tool of the physician just like a sword to a warrior. This is the aspect which has become more like a compromise to the physician at present – availability of a properly prepared and suitable medicinal recipe. During the ancient times medicines were either prepared by the physician himself or prepared under his supervision according to the need of the patient. Thus, the physician had an element of trust in the prepared medicine and could confidently administer it to his patients. This is not the scenario now. Selection of recipes and their preparation are at the hands of various pharmacies. It has definitely been of great advantage to the physicians. They prescribe these prepared medicines with the belief that they are being prepared properly by the industry but also with suspicion because standardization is at its infancy as far as Ayurvedic medicines are considered but since there is no other alternative option, they go for it.

The industry follows the principles of *Bhaishajya Kalpana* and also incorporates modern techniques for better and more effective production and marketing of medicines. They definitely face many problems in putting these principles into practice and they

find their own solutions for them mostly without proper research. These pharmaceutical modifications are done for various purposes like better dispensing, masking unfavourable taste, prolonging shelf life etc.¹ But physicians must be aware of the modifications that are done to the recipes described in the classical text books of Ayurveda and must be able to judge if such changes or modifications are necessary or not since production will depend upon their demand in the market which is created by the physicians.

Kwatha kalpana (decoction) which is a highly significant and an inevitable form of medication in almost all prescriptions by an Ayurvedic physician is the primary subject of this study. It is a water-based preparation to extract active compounds from medicinal plant materials. Here, the drug is boiled with a specific quantity of water for a fixed duration as mentioned in the classical text books of Ayurveda, and the filtrate is used as medicine.^{2,3} It has a shelf life of only one day.⁴ *Kwatha* is a medicinal preparation containing plant materials and is similar to food. Hence there is a sure chance for the *kwatha* in getting spoiled. Classical Ayurvedic text books have given organoleptic evaluation for identifying the spoilage of *kwatha*.⁵ The spoilage happens due to the growth and activity of micro organisms, insects, action of plant enzymes, chemical reactions and by physical changes like those caused by freezing, drying etc.⁶ The kind of spoilage by microorganisms and enzymes will depend on the kinds and numbers of these agents present on the environment about them. The kinds and numbers of microorganisms that will be present on or in an edible item will be influenced by the kind and extent of contamination, previous opportunities for the growth of certain kinds and pre-treatments which the item has received. Again, the contamination may increase number of

microorganisms and may even introduce new kinds. Thus, unclean water, vessels and machineries may contaminate *Kwatha* also. As far as *Kwatha Kalpana* is considered this aspect has immense importance because contamination will increase the burden of preservation in market available preparations. The most popular and oldest method of dispensing *Kwatha* in the market is by preserving the *Kwatha* using chemical preservatives to raise its short shelf life of just one day.

Addition of class II chemical preservatives for increasing shelf life to three years is a modification of this dosage form available in the market. The choice and concentration of preservatives vary from pharmacy to pharmacy.

Background and Rationale of the study

The classical textbooks of Ayurveda, insists on the administration of *Kwatha* immediately after preparation, while it is warm.² But it is quite difficult to dispense this dosage form fresh. Owing to its high efficacy, it cannot be omitted from the prescription. Thus, a probable solution is to modify this dosage form in such a way that it can be stored for a considerable time without losing its efficacy. The pharmacies (in the early 80's) have thus devised a method such that the liquid *Kwathas* can be preserved as per modern techniques to preserve food, i.e., by using class II chemical preservatives. At present various other methods are also available to dispense *Kwathas*. They are:

- **Kashayam tablets**

Here, the prepared *Kwatha* is again concentrated until a thick paste like extract is obtained. It is dried, powdered, pounded with suitable excipients and finally punched into a tablet. Here the medicinal constituents per tablet will be less compared to the dose of liquid *Kwatha* advised as per literature. So, the number of tablets to be taken per day will be more in order to meet the therapeutic dose. Another aspect is about the disintegration time of tablets. It should be about 15 to 30 minutes ideally for its absorption from the stomach but sometimes it goes higher for most *Kwatha* tablets. Moreover, the cost of preparation is also higher and hence cost per tablet is also high. But the great advantage of this dosage form is that the unpalatable taste of *Kwatha* is masked and is convenient for transportation and use by the patient.

- **Kashaya Sukshma choorna**

Here, the fine powder of raw materials is dispensed in air tight packets. Suitable amount of powder needs to be boiled for a very small duration (five to ten minutes) and the filtered liquid is used. It is convenient for use since it is not much difficult to prepare. But the therapeutic efficacy cannot be compared to classical *Kwatha kalpana*. All raw materials cannot be finely powdered and period of contact between raw drugs and water is less. Thus, it is more like a *Phanta kalpana* (hot infusion) which is suited for softer drugs that do not require much heating.

- **Kashaya choorna (coarse powder)**

This is nothing but the textual method where the patient has to prepare the medicine at home after purchasing the coarsely powdered *yoga* (recipe) of a particular *Kwatha*. Even though it is therapeutically the most effective method, most patients do not have the time to prepare it daily. It also consumes a lot of fuel.

Compared to the above methods, liquid *Kwathas* with added chemical preservatives have more demand among the

practitioners. The demand may be due to the fact that it was the only kind of modification of *Kwatha* available during initial times. All other modifications came just recently. So, concentrated and preserved liquid *Kwathas* gained popularity as there was no other easier way of dispensing *Kwatha Kalpana*. The patient can consume the medicine after diluting the prescribed dose with water. Generally, one bottle of *Kwatha* constitutes 200 ml. A single dose is usually 15 ml or 20 ml diluted with 3 times of water and it is to be taken twice a day. The permitted level of food preservatives like benzoic acid, sodium benzoate and parabens are 0.1 to 0.2%.⁷ But it was found that this permissible limit was unable to preserve *Kwathas* for more than three months when benzoic acid was used as preservative. So definitely a larger amount is required if the *Kwathas* are to be kept for three years as said in the label of their bottles. This new limit which can preserve *Kwathas* effectively and at the same time be used safely can only be said by our pharmacies because they have been practicing this since almost three decades now and have already tried numerous permutations and combinations with different preservatives in different concentrations. Still there is considerable diversity in the use of preservatives by different pharmacies. Recent studies conducted to estimate sodium benzoate in *kwatha* showed addition of preservatives 10 to 15 times more than the internationally accepted level for food.⁸

Kwatha Extract – A Better Alternative

Here the decoction is prepared as per classical guidelines and then it is spray dried to prepare the extract. It is then dried below 50⁰ C to make the moisture content less than 4%. Next important step is packing of this extract in air tight sachets. The decoction can be prepared by dissolving the adequate amount of extract in warm water. The major benefit of this dosage form is that it is free from preservatives and additives and there is no concern about the disintegration time. It is also easy to carry and prepare. Studies shows that the efficacy also is same as usual classical decoction.⁹

CONCLUSION

Kwatha or *Kashaya* (water decoction) is an integral part of Ayurvedic prescriptions. Pharmaceutical modifications are carried out in the traditional methods of *kwatha* preparation for better dispensing, shelf life etc. Each have its own advantages and draw backs. Among these the extract sachets are the safest form as it is preservative free.

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