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Rationality of pharmaceutical preparations in Ayurveda

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ABSTRACT

Pharmaceutical preparations are meant for easy application of drugs and also to ensure ready and harmless usage. Preparations in Ayurveda are primary and secondary. Primary preparations are aqueous preparations whereas secondary preparations are various types of fermented medications, oil and fat medicated preparations. Multi medicated drugs (*Avarthi*) are in other angle. Semi solid sweetened preparations like *Avaleha* provides with natural preservation and palatability for the medicinal ingredients. Preparations from metals and minerals like *Bhasma* and *Sindhura*, highly potentiated with reduced bulk are also in another angle with a wide spectrum of usage.

Key words: Ayurvedic pharmaceutical preparations, Taila paka, Rancidity.

INTRODUCTION

Vedas are the written documents of knowledge gathered or acquired from various aids. Ayurveda is the *Upaveda* of *Atharvaveda* "Ayushovedah Ayurvedah". It is the science which deals with *Ayuh* or life span. This include, *Hitaahitam Suknam Dukham Ayuh Tasya Hitaahitam|Maanam Cha Tacha Yatroktam Ayurvedasya Uchyathe* |^{[1], [2]}

So it accounts the positive and negative tribute relation to life span. Vagbhata mentions that the aim of life is to attain *Dharma, Artha, Kaama, Moksha*, in which the weapon is the *Shareera* itself and a crucial parameter is *Aarogya*. The ideal health, *Swaस्थ्यam*

is a multidisciplinary equilibrium condition of various factors such as *Sama-dosha* (*Dosha* with specified function), *Sama-agni* (functional equality of *Agni*), *Sama-dhatu* (*Dhatu*s at normal status) and *Mala Kriya* (excretory function at normal state).^[3] Apart from this, the psychic condition of the patient is also important, which is summarized as *Prasanna- Atma-Indriya-Manah*.^[4] Though it is the ideal state of health, due to various factors the equilibrium condition can be hurt, resulting in imbalance state or *Roga*.

The rehabilitation of the impaired condition can be attained by *Pratikriya* - the opposite therapeutic action either through *Dravya* or by other methods.

This can be done by *Dravya* since the *Tridosha* and *Dravya* are constituted by ideal elements, the *Panchamahabhutas*. But the integrity is in their ratio, which differs from each other. The duty of the *Vaidya* is to select the drug of choice in order to nullify the change or reestablish the initial condition by the application of *Dravya* or drug.

The application of *Dravya* can be done by specific forms of the drug otherwise there are no means to make the drug competent to nullify the changes. A drug should be easily available and should be in the form to be applied easily. Here comes the relevance of *Panchavidha Kashaya Kalpana*.

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REVIEW OF LITERATURE

Panchavidha Kashaya Kalpana

They are five in number hence known as *Panchavidha Kashaya Kalpana*. All of them have a unique character with similar drawbacks. They should be prepared timely by collecting the raw materials in time and according to the specific season. (*Shargdhara Samhita, Madyama Khanda & Astanga Hrudaya Kalpastana*)

Kashaya Kalpanas are the pharmaceutical modes of presentation of drugs. They are *Swarasa* (expressed juice), *Kalka* (macerated pulp), *Srutham* (decoction), *Sheetam* (cold infusion), *Phantam* (hot infusion).

Limitation

All of them have short shelf life of twenty four hours only. Since they are aqueous preparations, are highly prone to microbial contamination on standing. Apart from this most of them are oral supplements but with poor palatability which is a real problem for administration. The posology or dosage is with high quantum, creating problems in the administration.

Swarasa^{[5],[6]}

The expressed juice of plants containing water soluble ingredients and ingredients which make suspension with water is termed *swarasa*. The advantages are the preservation of thermo liable ingredients and reduced pharmaceutical problems. There are varieties in it; - *putapākaswarasa* obtained by processing the paste of the dravya with a special process of heating known as *sheelaman*. Here the mud smeared cloth is used to envelop the macerated pulp. This is heated with ignited cow dung cakes to the specific endpoint; here the end point is noted by the red hot condition of the covering. Finally the processed mass is collected after removing the envelop and is squeezed off. This contains ingredients having resistance to heat but with aqueous solubility. This also have the above said limitation of poor palatability and shelf life.

Kalka^{[7],[8]}

The macerated pulp of medicine having both internal and external use is *Kalka*. This too is employed for the preparation of other higher pharmaceutical modes. If the material is fleshy, it is directly macerated but in

the case of dry raw materials, maceration should be conducted with sufficient water.

The advantage of this process is that the particles are micro fined and as the cell walls are broken, the active ingredients are relieved. Since it is semi-hydrated media, it is highly prone to microbial contamination. It has wide form of application for therapeutic purposes and also for the preparation for higher modes. Eg: *Nimbakalka, Rasonakalka*. The drawback is the same as that of palatability, bulkiness and poor shelf life.

Sritham^{[9],[10]}

This mode of preparation is also known as *Kwatha* or decoction itself. It is prepared by boiling one *Pala* of drug (~ 48 gms) with sixteen times of water and the volume is reduced to 1/8th. Here also the problem of palatability, thermal deterioration and quantum marks. The dosage one *Palam*, also create problems similar to other preparations like stability or expiry problems.

There are regulations for its preparations like it should not be boiled in closed circumstances but in open condition. If the vessel is closed the vapour will be thrice by which the boiling point also rise, creating thermal deterioration problem beyond the evil aspects of unwanted extraction of ingredients.

Sheeta Kashaya^{[11],[12]}

This preparation is known as cold infusion, as the drug is extracted with cold water, because the ingredients are having aqueous solubility in ordinary temperature. In high temperature, the thermo liable ingredient will be lost, and hence the methodology.

Phanta Kalpana^{[13],[14]}

Here the methodology is similar. But in order to facilitate solubility of ingredient at moderate temperature, hot water is used. The specificity of ingredients is diminished solubility at lower temperature but having thermo liable nature at higher temperature.

Mantham^{[15],[16]}

This is a variety of *Phanta*, but churning is employed with it so as to facilitate the solubility. During the process, contact is established between solvent and solute and hence super saturation problem is out of

question. All of these are basic preparation having the above said merits and demerits.

Secondary preparations

They are preparations beyond the primary products with more extraction capacity and application. Most of the existing ones are secondary preparations which are more stable and are having reduced bulk and with the advantage of being naturally preserved. This includes fermented preparations like *Arishta* and *Asava*, *Gulika*, *Avaleha*, *Taila Kalpana* etc.^[17]

In *Taila Kalpana* various stages of transformations (*Paka*) are mentioned like *Mrudu*, *Madya*, *Khara* as pharmaceutically useful endpoints, whereas the *Ama* and *Dagdha* (over burnt) *Paka* are not useful. The deciding factors in this *Paka* are moisture content which can be detected through the parameters like condition of the *Kalka*, effervescence and organoleptic parameters. *Ama Paka* is abundance of moisture and hence it is sticky.^[18] This is not useful as it can cause edema on application. *Dagdhapaka* is charred variety and this is also not used. *Mrudupaka* is for *Nasya*, *Madhyamapaka* for oral administration and *Kharapaka* for external application.^{[19],[20]}

Physically it is determined by range of effervescence on boiling and nature of *Kalka* with fire and other physical parameters of *Kalka* like murky thread like and sandy consistency.

Recently standardization parameters like saponification factor, iodine value etc along with the usage of antioxidants are implemented medicament.^[21] (S J Carter, 2000).

Taila moorchana^[22] is a pre-pharmaceutical procedure to remove the unpleasant odor and taste of the oil medium by rancidity. Now antioxidants are employed for it.

Due to various types of rancidity the oil media loses its identity and ability. Hence the process of *Taila Moorchna* is important to make it an ideal solvent to acquire all the medicinal properties of the medicament,^[23] Studies reveal the effect of *Taila Moorchna* in reducing peroxide value, iodine value significantly, is how it reduces rancidity. The process of preparation of medicated oils and fats are also

important in pharmaceutical angle. The ratio of oil medium to other liquid material or *Drava-Dravya* is 1:4 which depends on dissociation constant of the medium in extraction.^{[24],[25]} The process should also be in open atmosphere otherwise pressure will increase which elevates the boiling point of the oil medium, can cause some evil effects. Significance and importance of *Paka* has been already stated.

Concentrated sugar or jaggery preparation like *Avaleha* is in other side. Here the concentrated base of sugar is tested with parameters with *Tanthumat* (fibrous consistency), *Jalanimanjana* (sinking in water), organoleptic parameters (*Gandhavarasarasotpatti*) etc.^[26] In a concentrated sucrose base in which the medicinal ingredients are being incorporated, act as a sweetened palatable absorbent base, preserved medium, naturally flavored medium etc.

CONCLUSION

So all the above described processes are with authentic scientific basis and the endpoints or *Paka* are highly significant in pharmacological angle or application.

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