Review Article

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AN APPRAISAL ON THE TOOL PARAMETERS TO APPROACH PHARMACEUTICAL STANDARDIZATION OF SNEHA KALPANA IN TODAY'S ERA

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ABSTRACT

In order to produce quality herbal formulations, it is essential that standardization and validation of herbal materials and processes should be done and documented. There are many modalities like primary orsecondary in our system but the only dosage form which is used both internally as well as externally is Sneha Kalpa. Sneha Kalpana [Oleaginous preparation] is a secondary formulation in which Taila (oil) or Ghrita (clarified butter) are used as media into which both water and lipid soluble active principles of the drugs are extracted to enhance the drug absorption and the therapeutic value of sneha (oiliness). This modality of sneha have a better pharmacokinetic action in comparison to other dosage forms because of the lipoid nature of bio-membranes of our body. Hence this mainstay has utmost importance over other dosage forms. Various pharmaceutical factors affect quality of snehapaka such as Vessel (Earthen, Copper, and Stainless still) to be used, temperature (High or Low flame), ratio of water to be added, span of heating etc. Qualitative and quantitative estimation of phytoconstituents using appropriate analytical techniques is imperative; hence need pertinent standardization in pharmaceutical processing.

KEY WORDS: Standardization, Sneha (oiliness), Pharmacokinetic, Qualitative, Quantitative

INTRODUCTION

Demand of herbal drugs and commercialization of medicines is increasing day by day. So it's imperative to standardize the pharmaceutical processing of herbal formulations solely to protect them from improvisations and changes from the classical formulation techniques and preparatory methods and make them more potent, efficacious and consistent in composition[1].In the present era, maintaining step wise uniformity of the pharmaceutical processing is one of the standard tool parameter toward the standardization of a classical formulation. Ayurveda has also given utmost importance to quality of drug, maturity of plant, season and time of collection; standard preparation methods and its mode of usage in logical manner[2]. Therefore, it's confronting issue to get proper standard of drugs of herbal origin due to highly uncontrolled variations in seasonal and ecological factors but the pharmaceutical unfolds can be controlled by bringing the consistency at all stages of procedures. Various Ayurvedic pharmaceutical procedures need to be controlled in this context.

Among them Sneha Kalpana is an important dosage form. Sneha kalpana is composed of two words: Sneha and Kalpana. Root word of Sneha is *"Snih Preetau"* which means, smoothness, love, oiliness etc. Kalpa is *"Krup samarthye*" *kalpayate vidhiyate asav vidihi* means "to generate power in any desired matter[3]. For obtaining standard quality of Sneha kalpana (fatty preparation) it's very important to concentrate on its pharmaceutical factors such as temperature, vessels for preparation, quantity of water, duration of heating etc.

According to Ayurvedic classics, Sneha Kalpana may be defined as "the medicament prepared by using one part of Kalka dravya (paste of indicated herbal ingredients), four parts of oil/ghrita (butter)and sixteen parts of Drava dravya (liquid media mostly kwatha –decoction of herbs)". Dravadravya may be other than Kwatha such as Jala, Swarasa (juice), Kanji (sour liquid), Mamsarasa (meat juice), Gomutra (cow's urine) etc[4]. But there are different opinions among Acharyas about addition of water, vessels to be used and duration of heating etc. Use of earthen pot is discarded now a days as it is not suitable for large scale preparation. Imperatively temperature should be considered to protect the thermo-sensitive drug constituents. Duration of heating also has to be decided to get maximum active principles in prepared Sneha. These are the various factors which need to be optimized in order to get standardized Sneha formulation. So to get the pertinent and confined standard of Sneha formulation certain criteria need to be fixed. Present paper will discuss the various factors affecting quality of Sneha and need for standardization.

Pharmaceutical aspects to be assessed during sneha kalpana

1) Vessels to be used
2) Ratio of water
3) Temperature
4) Heating span
5) Physico-chemical analysis of sneha

1) Vessels to be used for snehapaka

Vessel imparts a specific role in Sneha preparation. In antiquity the attributes like temperature maintenance, their alkalinity, and inertness toward chemical reaction with constituent raw drugs hold promise to use earthen pots[5]. Now a days Copper or Iron pan or earthen vessels are used. Usually copper vessel with tin coating having broad mouth and shallow are used[6].

2) Ratio of water

In Snehapaka, texture (Hard, medium and Mild) and weight of raw drugs are the determining factors towards the quantity of water to be used[7]. Ratio of water in Kwatha (decoction) preparation during Snehapaka is empirically determined by the pharmacist[8]. It's a postulation that when Sneha preparation media is Dugdha **(**milk), Dadhi (yoghurt), Takra (buttermilk), and Mamsrasa (meat juice) then Kalka (paste*)* should be one-eighth and water should be added four times for Samyak Paka (normal) to confer active constituents[9].

3) Temperature

For the preparation of any sneha paka, we have to use Mandagni (50°C -80 °C) and Madhyamagni (80°C -90 °C) (gentle to medium heat) only. In ancient literature Charaka and Sushruta have mentioned mridu agni for Sneha preparation. Only Dalhana has mentioned madhyamagni for Sneha preparation. Temperature should be considered to protect the thermo-sensitive drugconstituents[10].

4) Heating span

The oleaginous medicaments should not be prepared within a day as the complete confer of active principles into the prepared formulation requires more time. The time span also depends on the texture of raw drugs or liquid substances added to sneha[11]. In Harita Samhita it is stated to complete taila paka in 15 days, ghrita paka in 7 days and kashaya (decoction) paka in 1 prahara.

5) Physico-chemical analysis ofsneha

For acquisition of uniformity, qualitative and quantitative analyses are the key factors towards standardization of sneha. Organic and inorganic discrimination survey, Weight per milliliter at 25° C, Acid Value, Viscosity, pH, Iodine Value, Saponification Value, Refractive index at 40° C, Peroxide Value, Assay for heavy metals, Total microbial count, Test for aflatoxins (B_1,B_2,G_1,G_2), Thin Layer Chromatography (TLC), UV- visible spectrophotometry and High Performance Liquid Chromatographic (HPLC) fingerprint are imperative studies to be carried out for sneha standardization[12]. Elucidation of biological activity is confined by Qualitative assay as it discriminates the presence of functional groups like tannins, mucilage, ascorbic acid, saponins etc[13].Murchana (heating process)[14] is accomplished to increase the potency of oleaginous medicaments and to avert the bad odour and aama dosha. It confers the active principles to sneha and makes them more efficacious. It was first provoked by Bhaishajya Ratnavali[15]. Many discoveries revealed[16] that it lowers the acid value and increases saponification value. Lower acid value explicates fewer amounts of free fatty acids while the higher saponification value explicates the high amount of low molecular weight fatty acids. Analysis can be done on the basis of different variables such as type of vessels, ratio of water to be added, effect of temperature on phytoconstituents, and span of heating to achieve standard quality of Sneha in terms of phytoconstituents to produce the substantiate clinical response.

DISCUSSION

In Sneha kalpana standardization of pharmaceutical factors play important role. Vessels to be used should be inert toward chemical reactions with constituent raw drugs. Although due to practical difficulty it is not quite possible to use earthen pot, it should be replaced with copper vessel with tin coating having broad mouth and shallow in nature are used. Different proportions of water (4, 8 and 16) is mentioned in ancient method of Sneha kalpana. Usually water in Kwatha (decoction) preparation during Sneha paka is empirically determined by the pharmacist, texture (Hard, medium and Mild) and weight of raw drugs. Temperature should be considered to protect the thermo-sensitive drug constituents. Generally mild heat should be used and furthermore the exact temperature can be measured by using thermometer. Various previous studies on Sneha kalpana suggest temperature between 85-100^{0}C for Snehapaka. Qualitative and Quantitative estimation of phytoconstituent by physico-chemical and chromatographic studies by controlling above variables is the need of the hour in order to achieve uniformity in pharmaceutical preparation of Sneha up to some extent.

CONCLUSION

Sneha kalpana is utmost important in Ayurvedic pharmacy as it is the only dosage form which is used both internally as well as externally. Although standard parameters for Sneha kalpana is mentioned in Ayurvedic pharmacopeia of India, pharmaceutical factors are not fixed. Study on various pharmaceutical factors such as vessel, temperature, water to be added, duration of heating and its standardization in terms of respective active phytoconstituents is needed to optimize it in present scenario for universal acceptance so that uniformity can be achieved.

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