



CONTEMPORARY AND CLASSICAL REVIEW OF SNEHA KALPNA

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ABSTRACT :

Sneha Kalpana represents a category of Ayurvedic formulations involving medicated oils and ghee, renowned for their broad therapeutic applications across various age groups. Meanwhile, the liposomal drug delivery system is a recent advancement in conventional medicine, achieving significant therapeutic objectives by targeting specific sites effectively. There appears to be a notable similarity between these two systems, given their common aqueous and oleaginous origins, suggesting they might be analogous in function. This review paper surveys existing literature to explore the potential for integrating the principles of

Sneha Kalpana and liposomal systems, hypothesizing that such an interdisciplinary approach could benefit humanity. Further research is necessary to substantiate or refute this hypothesis.

Introduction :

Sneha Kalpana/Paka can be defined as a pharmaceutical process used to create oleaginous medicaments. This process involves the use of substances such as Kalka (herbal paste made from various botanical parts), Kwatha (decoctions prepared according to Ayurvedic principles), or Drava Dravya (liquids like milk, self-expressed juices, meat juice, etc.). These components are combined in specific proportions and subjected to a unique heating pattern and duration to meet particular pharmaceutical standards, tailored to therapeutic requirements.

Sneha Kalpana/Paka is a distinctive dosage form in Ayurveda, designed to facilitate the transfer of both aqueous and lipid-soluble active principles from treated herbal drugs, as well as materials of animal and mineral origin, according to established formulations cited in authoritative Ayurvedic texts. The goal of this process is to achieve therapeutic objectives as specified in classical Ayurvedic treatises.

In contrast, conventional pharmaceuticals continuously evolves to develop new dosage forms aimed at increasing drug bioavailability for maximum therapeutic effect. One such advanced dosage form is the liposome, which consists of nanoparticles with lipid bilayer membranes surrounding an aqueous interior. These amphiphilic molecules resemble biological membranes and are used to enhance the efficacy and safety of various drugs. In this form, the active compound can be positioned either in the aqueous spaces, if water-soluble, or in the lipid membrane, if lipid-soluble.

Extensive research has been conducted on liposomal drug delivery systems to formulate sustained and controlled release dosage forms for both oral and parenteral administration. The objective is to optimize drug action by transporting functional molecules via a carrier to the site of action and releasing them to perform their function. The carrier must be non-toxic, biodegradable, and appropriately shaped and sized to accommodate a wide range of substances, with liposomes meeting all these criteria.

Consequently, liposomes have been extensively evaluated for controlled and targeted drug delivery in the treatment of cancer, viral infections, and other microbial diseases. They are particularly suitable for localizing topically applied drugs at or near the site of application, acting as slow-release vehicles.

It appears that Sneha Kalpana/Paka in Ayurveda and liposomes in conventional medicine share significant similarities in their origins and characteristics, both being lipid-based. In Sneha Paka preparation, specific ingredients and media are combined in precise ratios and heated with oil or ghee at specific temperatures for set durations until completion tests are met. The primary aim is to transfer the active constituents of herbs into the lipid and aqueous phases according to their solubility.

Liposome preparation follows a similar pharmaceutical principle, though heating is not the only method employed; techniques such as sonication, homogenization, and shaking are also utilized. In liposomes, lipid-soluble compounds reside in the outer lipid bilayer, while water-soluble components remain in the inner aqueous space.

Given these similarities, it is plausible to hypothesize that Sneha Paka may share structural and functional properties with liposomes. This hypothesis posits that liposomes are a modified or developed form of the traditional Sneha Kalpana/Paka. This paper explores this concept, comparing the two systems based on factual parameters from both Ayurvedic and modern pharmaceutical sciences.

****Sneha Kalpana/Paka Overview****

Classical Ayurvedic texts, including Charaka Samhita, Sushruta Samhita, and Ashtanga Hridaya, provide systematic guidelines for the preparation of medicated oils (taila) and ghee (ghrita). However, Sharangdhara Samhita is considered the most authoritative source for the pharmaceutical details of various herbal dosage forms. Below are key preparatory guidelines from Sharangdhara Samhita to enhance understanding of Sneha Kalpana:

According to Sharangdhara Samhita, Sneha Kalpana involves preparing medicaments using one part Kalka dravya (paste of specified herbal ingredients), four parts oil/ghee (typically sesame oil or cow ghee), and sixteen parts Drava dravya (liquid media, usually a herbal decoction called kwatha). Drava dravya can also include water, swarasa (self-expressed herbal juice), kanji (fermented herbal beverage), mansa rasa (meat juice), and gomutra (cow urine).

****Preparation of Kwatha****

For preparing kwatha, the amount of water added varies according to the hardness of the chopped herbs:

- Mridu dravya (soft texture herbs): four times the quantity of herbs.
- Madhyama dravya and Kathina dravya (medium and hard texture herbs): eight times the quantity of herbs.
- Atyanta kathina dravya (very hard herbs): sixteen times the quantity of herbs.

Classical rules for Sneha preparation include:

1. When using jala (water), kwatha (decoction), or swarasa (self-expressed juice) as Drava dravya, the amount of Kalka used should be one-fourth, one-sixth, and one-eighth of Sneha, respectively.
2. For preparations using dugdha (milk), dadhi (curd), takra (buttermilk), or mansa rasa (meat juice), the Kalka used should be one-eighth, with water added four times for samyaka paka (moderate heating) to ensure complete transfer of active principles.
3. If more than five Drava dravyas are used, each should be in the same quantity as Sneha. If fewer than five, the total quantity of all liquids should be four times.
4. When Paka is indicated with only Kalka dravyas, water should be added four times the Sneha to replace Drava. When Paka is indicated with only kwatha dravya, the Kalka should be prepared from the drugs used in kwatha.
5. When flowers are used as Kalka dravya, their quantity should be one-eighth that of Sneha.

These guidelines provide a systematic approach to the preparation of Sneha Kalpana/Paka, highlighting its potential similarities and differences with modern liposomal formulations.

****Sneha Siddhi Lakshanas, Types of Sneha Paka, and Duration****

In Sharangdhara Samhita, the completion tests for medicated oils and ghee, the types of Sneha Paka (Mridu, Madhya, and Khara Paka), and the duration of the manufacturing process based on the type and proportion of constituent materials are comprehensively discussed. These parameters not only determine the completion of Sneha Kalpana/Paka but also serve as critical criteria for the quality control of these products.

****Therapeutic Versatility of Sneha Kalpana/Paka****

Sneha Kalpa, which are Ayurvedic medicated oils and ghee formulations, are employed in both topical and systemic therapies, demonstrating a wide range of therapeutic applications. The following are some of the diverse uses of Sneha Kalpana:

1. ****Nasya Kalpana (Nasal Preparations)****
- Examples: Shadabindu Taila, Anu Taila
- Application: Administered nasally for various therapeutic effects.
2. ****Mukha Kalpana (Oral Preparations)****
- Examples: Irimedadi Taila
- Types: Gandusha (oil pulling) and Kawala (gargling)
3. ****Netra Kalpana (Eye Preparations)****
- Examples: Triphala Ghrita
- Application: Used for eye health and treating various ocular conditions.
4. ****Abhyanga (Massage)****

- Examples: Dashamula Taila
 - Application: Used for therapeutic massage to promote health and wellness.
5. ****Anuvasana Basti (Enema)****
 - Examples: Saindhavadi Anuvasana Taila
 - Application: Administered as an enema for cleansing and therapeutic purposes.
 6. ****Uttarbasti and Pichu (Urethral and Vaginal Applications)****
 - Examples: Mushakadya Taila
 - Application: Used for specific therapeutic procedures involving the urinary and reproductive systems.
 7. ****Snehana in Panchakarma Therapy (Internal and External Oleation)****
 - Examples: Pancha Prasritiki Peya
 - Application: Employed as part of the Panchakarma cleansing and rejuvenation process.
 8. ****Internal Administration for Shodhana (Purification) and Nourishment****
 - Examples: Panchatikta Ghrita, Kshira Bala Taila
 - Application: Used internally for detoxification, nourishment, and overall health.
 9. ****Treatment of Non-Healing Ulcers****
 - Examples: Jatyadi Ghrita
 - Application: Applied to chronic ulcers and wounds to promote healing.

These examples highlight the extensive therapeutic versatility of Sneha Kalpana/Paka, demonstrating its significance in Ayurvedic medicine for both localized and systemic treatments. The systematic and comprehensive preparation methods outlined in classical texts ensure the efficacy and quality of these formulations.

An elegant literary appraisal, drawing from both a 2000-year-old medical system and recent research, highlights the unique methodologies of sustained and controlled drug delivery achievable with Sneha Kalpana and liposomal drug delivery systems. These dosage forms, through their unique structural specifications, serve a wide range of therapeutic objectives with distinct efficacy.

We urge laboratory researchers to validate this hypothesis of correlation, which could elevate the application of Sneha Kalpana by integrating the technological advancements of liposomal drug delivery systems into its pharmaceuticals and therapeutics.

****Conflict of Interest****

The objective of this review is to establish a bridge between traditional wisdom and contemporary drug delivery systems, where the integration of innovative advancements can enhance traditional dosage forms. Additionally, this approach seeks to add intrinsic value to modern dosage forms by drawing on ancient knowledge.

We anticipate no conflicts of interest with this theme. Both authors declare no vested interests in this review.

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