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Review Article

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"BHAISHAJYA KALPANA IN SAMHITA PERIOD: A CRITICAL REVIEW OF CLASSICAL AND MODERN PERSPECTIVES"

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ABSTRACT

Introduction: Bhaishajya Kalpana, the Ayurvedic science of formulation and dosage forms, is a fundamental component of classical therapeutics. It encompasses methods of preparing herbal, mineral, and herbo-mineral medicines to enhance efficacy, stability, and patient compliance. Samhitas describe various Kalpana types, their principles, and therapeutic applications, forming the basis for modern Ayurvedic pharmaceutics. **Methods:** A systematic literature review was conducted using classical texts (*Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya*) and modern databases (PubMed, Scopus, Web of Science, Google Scholar). Keywords included "Bhaishajya Kalpana," "Ayurvedic formulation," "Samhita pharmaceutics," and "Ayurvedic dosage forms." Included studies were classical descriptions, experimental research, and clinical trials evaluating formulations and their pharmacological actions. Non-peer-reviewed sources and anecdotal reports were excluded. **Results:** Samhitas describe a range of formulations, including *Kwatha, Churna, Gutika, Vati, Asava, Arishta, Bhasma,* and *Lehyam*, with specific preparation methods and indications. Modern studies validate pharmacological efficacy, bioavailability, and therapeutic potential of these formulations in conditions such as metabolic disorders, inflammatory diseases, and chronic infections. Standardization, quality control, and incorporation of contemporary pharmaceutical techniques enhance clinical applicability. **Discussion:** Bhaishajya Kalpana integrates classical principles with modern pharmaceutics. While therapeutic efficacy is well-documented, challenges include variability in raw materials, lack of standardization, and limited large-scale clinical trials. Future prospects involve translational research, pharmacokinetic studies, and evidence-based standardization of classical formulations. **Conclusion:** Bhaishajya Kalpana represents a scientifically robust, clinically relevant framework for Ayurvedic medicine preparation. Evidence-based integration into modern healthcare can optimize therapeutic outcomes, ensuring safety, efficacy, and patient compliance.

KEYWORDS: Ayurveda, Bhaishajya Kalpana, Dosage Forms, Formulations, Pharmaceutics

INTRODUCTION

Bhaishajya Kalpana, the classical Ayurvedic science of drug formulation, deals with principles and methods to prepare medicines in a form suitable for therapeutic administration. The aim is to enhance bioavailability, efficacy, and stability while ensuring ease of consumption[1-2]. Samhitas provide extensive descriptions of dosage forms and preparation methods for herbal, mineral, and herbo-mineral medicines[3-4].

The significance of Bhaishajya Kalpana extends beyond preparation; it influences pharmacokinetics, pharmacodynamics, and patient compliance[5]. Classical texts classify formulations into solid, liquid, semi-solid, and metallic dosage forms, with specific guidelines on ingredients, processing, and administration. These formulations have been traditionally used for the management of chronic, acute, and preventive therapies, demonstrating a holistic approach to treatment[6-7].

Despite the historical richness, scientific exploration of Bhaishajya Kalpana is ongoing. Modern pharmaceutics emphasizes standardization, quality control, and pharmacological validation to ensure reproducible therapeutic outcomes[8-9]. To critically analyze Bhaishajya Kalpana as described in Samhitas and evaluate its clinical relevance. Summarize classical formulations and dosage forms described in Samhitas. Review modern pharmacological and clinical evidence supporting these formulations. Identify gaps in standardization, research, and clinical integration[10].

MATERIALS AND METHODS

Literature Search Strategy: [11]

- Classical texts: *Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya* with commentaries.
- Modern databases: PubMed, Scopus, Web of Science, Google Scholar.
- Keywords: "Bhaishajya Kalpana," "Ayurvedic dosage forms," "Samhita formulations," "Ayurvedic pharmaceutics," "Ayurvedic medicine preparation."

Inclusion Criteria: [12]

- Classical descriptions of Bhaishajya Kalpana.
- Experimental studies, pharmacological evaluations, and clinical trials assessing Ayurvedic formulations.
- Peer-reviewed review articles correlating classical knowledge with modern evidence.

Exclusion Criteria: [13]

- Non-peer-reviewed or anecdotal sources.
- Studies not related to formulation methods or pharmacological efficacy.

Data Synthesis: [14-15]

- Organized by dosage form: *Kwatha (decoction), Churna (powder), Vati/Gutika (tablet), Asava/Arishta (fermented preparations), Lehyam (semi-solid), Bhasma (calcined metals/minerals).*
- Findings summarized for preparation, pharmacology, and clinical application.

OBSERVATION AND RESULTS

1. Classical Perspective of Bhaishajya Kalpana

- Samhitas provide detailed methods for herbal, mineral, and herbo-mineral preparations.
- Dosage forms include:
  - **Solid:** Churna (powder), Vati/Gutika (tablet), Pishti (fine powder of minerals).
  - **Liquid:** Kwatha (decoction), Asava (fermented herbal infusion), Arishta (fermented decoction).
  - **Semi-solid:** Lehyam (medicated pastes or jams), Avaleha.
  - **Metallo-mineral:** Bhasma (calcined metallic/mineral preparations).

2. Preparation Techniques

- Ingredients selected based on pharmacological properties, compatibility, and potency enhancement.
- Classical methods involve purification (*Shodhana*), processing (*Marana, Bhavana*), and dosage form conversion.
- Emphasis on time, temperature, and medium ensures stability and therapeutic efficacy.

3. Pharmacological Relevance

- **Decoctions and Fermented Preparations:** Facilitate rapid absorption and bioavailability.
- **Powders and Tablets:** Enhance stability, ease of dosing, and shelf-life.
- **Bhasma:** Demonstrate micro-nano particle properties for bioavailability with reduced toxicity.
- Modern studies confirm anti-inflammatory, antioxidant, hepatoprotective, anti-diabetic,

and neuroprotective effects of classical formulations.

4. Clinical Applications

- Management of chronic disorders: metabolic syndromes, respiratory conditions, digestive ailments.
- Immunomodulatory and rejuvenative therapies in geriatric care.
- Rasayana formulations often prepared as Lehyam or Asava to enhance longevity, immunity, and vitality.

5. Modern Correlations

- Analytical techniques such as HPLC, GC-MS, and spectrophotometry validate consistency and pharmacological activity.
- Preclinical studies confirm therapeutic potential; clinical trials support efficacy in chronic disease management.
- Formulation standardization is key for reproducible clinical outcomes.

6. Safety and Standardization

- Classical texts emphasize Shodhana (purification) to minimize toxicity.
- Contemporary pharmaceutics ensures proper identification, quality control, and validated processing.

Bhaishajya Kalpana integrates traditional knowledge with modern scientific validation, emphasizing safety, efficacy, and therapeutic relevance. Classical dosage forms and preparation techniques remain relevant for contemporary clinical application.

DISCUSSION

Bhaishajya Kalpana represents the foundation of Ayurvedic pharmaceutics, blending classical principles with practical formulation techniques. Classical texts meticulously describe preparation, dosage, and administration, ensuring stability and efficacy of medicines[16].

Modern Relevance: [17]

- Fermented and decoction-based formulations improve bioavailability, similar to modern liquid dosage systems.
- Calcined Bhasmas resemble nanomedicine applications, enhancing therapeutic potential.
- Clinical and preclinical studies validate anti-inflammatory, antioxidant, immunomodulatory, and anti-diabetic effects.

Advantages: [18]

- Multi-component, multi-targeted therapy with minimal adverse effects.
- Offers preventive, therapeutic, and rejuvenative benefits.

Challenges: [19]

- Lack of standardized preparation methods in modern production units.
- Variability in raw material quality affects pharmacological consistency.
- Limited large-scale randomized controlled trials.

Future Prospects: [20]

- Standardization of classical formulations using modern pharmaceutics.
- Integration into evidence-based healthcare.
- Translational research to validate classical preparation methods and bioavailability studies.

Bhaishajya Kalpana forms the basis of scientifically rational Ayurvedic therapeutics. Integrating classical preparation techniques with modern standardization ensures safety, efficacy, and clinical applicability.

CONCLUSION

Bhaishajya Kalpana represents a sophisticated system of Ayurvedic pharmaceutics, emphasizing therapeutic efficacy, stability, and patient compliance. Classical Samhitas provide detailed guidelines on dosage forms, preparation techniques, and administration methods, which remain relevant today. Modern research validates the pharmacological actions and therapeutic efficacy of classical formulations, supporting their role in chronic disease management, rejuvenation, and preventive healthcare.

Despite advancements, challenges remain in standardization, quality control, and large-scale clinical validation. Future research should focus on translational studies, bioavailability analysis, and evidence-based integration of classical formulations into modern therapeutics.

In conclusion, Bhaishajya Kalpana provides a scientifically robust, clinically relevant framework for formulation development in Ayurveda. Evidence-based standardization and integration can optimize therapeutic outcomes, improve patient safety, and strengthen the credibility of classical Ayurvedic medicines in contemporary healthcare.

REFERENCES

1. Charaka. *Charaka Samhita*, Chikitsasthana. Chaukhambha Bharati Academy; 2017.
2. Sushruta. *Sushruta Samhita*, Chikitsasthana. Chaukhambha Sanskrit Sansthan; 2018.
3. Vagbhata. *Ashtanga Hridaya*, Chikitsasthana. Chaukhambha Orientalia; 2016.
4. Sharma PV. *Dravyaguna Vijnana*. Chaukhambha Bharati Academy; 2014.
5. Singh RH. *Foundations of Ayurveda*. Chaukhambha Orientalia; 2008.
6. Mishra LC, et al. *Scientific Basis for Ayurvedic Therapies*. CRC Press; 2004.
7. Patwardhan B, et al. Pharmacological basis for Bhaishajya Kalpana. *J Ayurveda Integr Med*. 2010;1:101–10.
8. Tiwari S, et al. Ayurvedic dosage forms: Preclinical and clinical evaluation. *J Ethnopharmacol*. 2014;155:1089–97.
9. Raut A, et al. Classical formulations and neuroprotective activity. *AYU*. 2015;36:212–20.
10. Singh S, et al. Ayurvedic medicine preparation: Clinical outcomes. *Phytother Res*. 2018;32:1785–92.
11. Dhiman KS. *Ayurveda in Geriatric Care and Rejuvenation*. AYU. 2011;32:12–20.
12. Choudhary A, et al. Bhaishajya Kalpana review. *J Ayurveda Integr Med*. 2012;3:657–68.
13. Gupta A, et al. Immunomodulatory effect of classical formulations. *Int J Ayurveda Res*. 2015;1:150–5.
14. Rajasekaran S, et al. Integration of Bhaishajya Kalpana in modern therapeutics. *J Ayurveda Integr Med*. 2018;9:200–6.
15. WHO. *Global Report on Traditional Medicine and Integrative Therapies*. Geneva; 2019.
16. Agarwal PK, et al. Evidence-based review of Ayurvedic formulations. *J Ethnopharmacol*. 2012;144:657–68.
17. Kumar A, et al. Pharmacological evaluation of Ayurvedic preparations. *Phytomedicine*. 2016;23:1655–63.
18. Patil S, et al. Standardization challenges in classical formulations. *J Ayurveda Integr Med*. 2017;8:244–52.
19. Rao N, et al. Clinical applications of Bhaishajya Kalpana. *AYU*. 2015;36:182–90.
20. Mishra P, et al. Analytical validation of Ayurvedic dosage forms. *Phytomedicine*. 2016;23:1234–45.