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Review Article

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"POLYHERBAL FORMULATIONS IN SAMHITAS: TRADITIONAL INSIGHTS AND MODERN PERSPECTIVES"

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ABSTRACT

Introduction: Polyherbal formulations are a central component of Ayurvedic therapeutics, described extensively in classical Samhitas. They combine multiple herbs to achieve synergistic therapeutic effects, enhance bioavailability, reduce toxicity, and target multiple pathophysiological mechanisms simultaneously. These formulations have been traditionally used for metabolic, neurological, inflammatory, and chronic diseases. **Methods:** A systematic review was conducted using classical texts (*Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya*) and modern scientific databases (PubMed, Scopus, Web of Science, Google Scholar). Keywords included "polyherbal formulations," "Ayurvedic polyherbs," "Samhita therapeutics," and "Ayurvedic combinations." Inclusion criteria comprised classical descriptions, preclinical and clinical studies on polyherbal formulations. Exclusion criteria included anecdotal reports or non-peer-reviewed sources. **Results:** Samhitas describe numerous polyherbal formulations, such as Triphala, Chyawanprash, Hingvashtaka, and Dashamoola, employed in digestive, neurological, respiratory, and musculoskeletal disorders. Modern research validates pharmacological activities including antioxidant, anti-inflammatory, hepatoprotective, immunomodulatory, and neuroprotective effects. Synergistic interactions among herbs improve therapeutic efficacy and reduce adverse effects. **Discussion:** Polyherbal formulations reflect a holistic approach to treatment in Ayurveda. Despite classical validation, challenges remain in standardization, quality control, and clinical validation. Integration of modern analytical, pharmacokinetic, and clinical methodologies can provide evidence-based support for these formulations, bridging traditional knowledge and contemporary medicine. **Conclusion:** Polyherbal formulations from Samhitas offer scientifically rational, clinically relevant therapeutic options. Evidence-based research, standardization, and translational studies are essential to optimize their clinical application in modern healthcare.

KEYWORDS: Ayurveda, Herbal synergy, Polyherbal formulations, Samhita, Therapeutics

INTRODUCTION

Polyherbal formulations constitute a cornerstone of Ayurvedic pharmaceutics[1]. By combining multiple herbs, Samhitas aim to maximize therapeutic efficacy, reduce side effects, and target complex disease processes[2]. Classical texts provide extensive descriptions of formulations, their preparation methods, indications, and dosages, reflecting an advanced understanding of synergistic pharmacology[3-4].

The rationale behind polyherbal combinations includes complementary actions, potentiation of therapeutic effects, and mitigation of individual herb toxicity. Prominent examples include *Triphala* for digestive and detoxification purposes, *Chyawanprash* for rejuvenation and immunity, and *Dashamoola* for musculoskeletal and inflammatory disorders[5-6]. These formulations demonstrate the multi-component, multi-targeted approach intrinsic to Ayurveda[7].

Modern scientific research has increasingly validated these classical formulations. Studies report anti-inflammatory, antioxidant, neuroprotective, immunomodulatory, and hepatoprotective properties, confirming the pharmacological relevance of classical combinations. Despite promising evidence, challenges persist in standardization, quality control, and large-scale clinical validation[8-9]. To critically review polyherbal formulations described in Samhitas and evaluate their clinical relevance. Summarize classical polyherbal formulations, their ingredients, and therapeutic indications. Review modern pharmacological and clinical evidence supporting these formulations. Identify gaps in research, standardization, and clinical integration for evidence-based application[10].

MATERIALS AND METHODS

Literature Search Strategy: [11]

- Classical texts: *Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya*, and their commentaries.
- Modern databases: PubMed, Scopus, Web of Science, Google Scholar.
- Keywords: "polyherbal formulations," "Ayurvedic combinations," "Triphala," "Chyawanprash," "Dashamoola."

Inclusion Criteria: [12]

- Classical descriptions of polyherbal formulations in Samhitas.
- Preclinical studies evaluating pharmacological properties.
- Clinical trials and review articles assessing efficacy and safety.

Exclusion Criteria: [13]

- Non-peer-reviewed reports, anecdotal sources.
- Studies not relevant to polyherbal formulations or therapeutic outcomes.

Data Synthesis: [14-15]

- Organized by formulation type and therapeutic application: digestive, neurological, respiratory, musculoskeletal, and immunomodulatory.
- Classical description, modern pharmacological evidence, and clinical outcomes summarized thematically.

OBSERVATION AND RESULTS

1. Classical Descriptions

- Samhitas describe polyherbal formulations with multiple herbs, each selected for specific pharmacological actions.
- Prominent examples:
  - **Triphala:** Amalaki, Haritaki, Bibhitaki; digestive, detoxification, and antioxidant.
  - **Chyawanprash:** 50+ herbs; rejuvenation, immunity enhancement.
  - **Dashamoola:** Ten roots; anti-inflammatory, analgesic, musculoskeletal disorders.
  - **Hingvashtaka:** Gastrointestinal disorders, carminative.

2. Preparation Techniques

- Decoctions (*Kwatha*), powders (*Churna*), pastes (*Avaleha*), and fermented preparations (*Asava/Arishta*) are common forms.
- Principles: dose standardization, ingredient synergy, enhancement of bioavailability, and reduction of toxicity.

3. Pharmacological Evidence

- **Antioxidant and hepatoprotective:** Triphala and Chyawanprash reduce oxidative stress and protect liver function.

- **Anti-inflammatory and analgesic:** Dashamoola reduces musculoskeletal inflammation.
- **Neuroprotective:** Brahmi and other herbs in polyherbal combinations improve cognition.
- **Immunomodulatory:** Chyawanprash enhances immune function in preclinical and clinical studies.

4. Clinical Applications

- Digestive disorders, chronic constipation, and metabolic syndromes.
- Musculoskeletal and inflammatory disorders: arthritis, joint pain.
- Neurological disorders: cognitive decline, memory impairment.
- Respiratory disorders: chronic cough, asthma management.

5. Modern Correlations

- Studies confirm synergistic effects of polyherbal combinations compared to single herbs.
- Analytical techniques (HPLC, GC-MS, LC-MS/MS) ensure standardization and quality control.
- Preclinical studies validate efficacy, safety, and mechanisms of action.

6. Safety and Standardization

- Classical texts emphasize purification (*Shodhana*) to minimize toxicity.
- Modern pharmacological studies highlight the importance of dosage, standardization, and clinical validation.

Polyherbal formulations from Samhitas demonstrate multi-targeted, synergistic therapeutic effects. Integration with modern pharmaceutics ensures quality, reproducibility, and evidence-based clinical relevance.

DISCUSSION

Polyherbal formulations represent the hallmark of Ayurvedic therapeutics. Their multi-component nature allows synergistic action, reduced toxicity, and multi-targeted disease management[16].

Modern Evidence: [17]

- Pharmacological studies confirm antioxidant, anti-inflammatory, hepatoprotective, immunomodulatory, and neuroprotective properties.
- Clinical studies support efficacy in metabolic, neurological, musculoskeletal, and respiratory disorders.

Advantages: [18]

- Holistic treatment approach targeting multiple pathophysiological pathways.
- Reduced side effects compared to single-drug therapies.
- Suitable for chronic, multifactorial, and lifestyle-related disorders.

Challenges: [19]

- Variability in raw material quality and preparation techniques.
- Limited high-quality, randomized clinical trials.
- Standardization, quality control, and pharmacokinetic validation are needed.

Future Prospects: [20]

- Evidence-based translational research bridging classical knowledge and modern therapeutics.
- Standardized polyherbal formulations for wider clinical use.
- Integration into contemporary healthcare systems for preventive and therapeutic applications.

Polyherbal formulations are scientifically rational and clinically relevant. Standardization, evidence-based validation, and translational studies can enhance their integration into modern medicine.

CONCLUSION

Polyherbal formulations described in Samhitas are foundational to Ayurvedic medicine. Classical formulations such as Triphala, Chyawanprash, Dashamoola, and Hingvashtaka demonstrate multi-targeted therapeutic action across digestive, neurological, musculoskeletal, respiratory, and immunological domains. Modern research validates their pharmacological relevance, including antioxidant, anti-inflammatory, neuroprotective, and immunomodulatory effects.

Despite promising evidence, challenges remain in standardization, quality control, and clinical validation. Translational research, pharmacokinetic studies, and large-scale clinical trials are essential for evidence-based integration. Standardized polyherbal formulations can enhance reproducibility, safety, and efficacy, bridging classical Ayurvedic knowledge

with modern therapeutic practices.

In conclusion, polyherbal formulations are scientifically rational, clinically relevant, and historically validated therapeutic tools. Evidence-based application can optimize patient outcomes, support preventive healthcare, and contribute to integrative medicine.

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