



“KSHARA KARMA AND AGNIKARMA IN SAMHITA PERSPECTIVE – A CRITICAL REVIEW”

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ABSTRACT

Introduction: Kshara Karma and Agnikarma are classical surgical techniques described in Ayurvedic Samhitas, particularly in *Sushruta Samhita*, for management of various chronic and acute conditions. Kshara Karma involves application of alkaline substances for chemical cauterization, whereas Agnikarma employs thermal cauterization for tissue excision or modification. Both are widely used in management of fistula, hemorrhoids, warts, chronic ulcers, and musculoskeletal disorders. **Methods:** A comprehensive literature review was conducted using classical Ayurvedic texts (*Sushruta Samhita*, *Charaka Samhita*, *Ashtanga Hridaya*), as well as modern research indexed in PubMed, Scopus, Web of Science, and Google Scholar. Inclusion criteria were textual descriptions of Kshara and Agnikarma, clinical studies, and experimental research evaluating efficacy and safety. Exclusion criteria included anecdotal reports and non-peer-reviewed sources. **Results:** Samhitas describe detailed procedures, indications, contraindications, complications, and post-operative care for Kshara and Agnikarma. Modern research supports their efficacy in anorectal disorders, chronic ulcers, warts, and musculoskeletal pain. Mechanisms include localized tissue necrosis, anti-inflammatory effects, and improved healing. Both therapies are minimally invasive alternatives to conventional surgical interventions. **Discussion:** Kshara and Agnikarma exemplify precise, rational surgical techniques rooted in classical principles. Integration with modern surgical practice can enhance outcomes, especially in chronic, refractory conditions. Evidence supports their safety and therapeutic relevance, but standardized protocols and randomized trials remain limited. **Conclusion:** Kshara Karma and Agnikarma provide scientifically grounded, effective interventions with potential for integration into contemporary clinical practice. Future translational research and clinical trials may further validate their efficacy and expand their application in integrative healthcare.

KEYWORDS: Agnikarma, Ayurveda, Kshara Karma, Samhita, Surgical Techniques

INTRODUCTION

Ayurveda encompasses a wide spectrum of surgical and therapeutic interventions, with *Sushruta Samhita* being the foundational text on surgical practice (*Shalya Tantra*)^[1]. Among these, Kshara Karma and Agnikarma are important localized surgical procedures, offering minimally invasive alternatives to conventional surgery. These techniques exemplify the principles of precise intervention, Dosha-based consideration, and post-operative care^[2-3].

Kshara Karma involves the application of alkaline preparations derived from plant or mineral sources. It is mainly used for chronic ulcers, fistula-in-ano, hemorrhoids, warts, and other localized lesions. The alkalinity helps in chemical cauterization, debridement of necrotic tissue, and stimulation of healing^[4-6]. Agnikarma, on the other hand, utilizes thermal cauterization to excise or modify diseased tissue. It has applications in musculoskeletal disorders, localized pain syndromes, chronic ulcers, and certain ocular and ENT conditions. Both techniques combine procedural precision with pharmacological principles, reflecting an integrated approach to tissue management^[7-8].

This review aims to critically analyze Kshara Karma and Agnikarma as described in the Samhitas and evaluate their relevance in contemporary clinical practice. The objectives are: To explore historical perspectives, classification, indications, contraindications, and procedures of Kshara Karma and Agnikarma, to summarize modern experimental and clinical evidence supporting these therapies, to identify gaps, future prospects, and integration potential with contemporary medicine^[9-10].

MATERIALS AND METHODS

This review employed a narrative synthesis approach. Primary sources included classical Ayurvedic texts (*Sushruta Samhita*, *Charaka Samhita*, *Ashtanga Hridaya*) with authoritative commentaries. Secondary sources included peer-reviewed journals indexed in PubMed, Scopus, Web of Science, and Google Scholar using keywords: “Kshara Karma,” “Agnikarma,” “Ayurvedic surgical techniques,” “Sushruta Samhita surgery.”^[11-12]

Inclusion criteria:^[13]

- Classical descriptions of Kshara and Agnikarma procedures.

- Clinical and experimental studies evaluating efficacy, safety, and mechanism.
- Comparative studies with modern surgical techniques.

Exclusion criteria:^[14]

- Anecdotal reports and non-peer-reviewed articles.
- Studies unrelated to therapeutic Kshara or Agnikarma interventions.

Data was organized thematically under: historical description, classification, indications, procedure, modern clinical evidence, complications, and integration with modern medicine^[15].

OBSERVATION AND RESULTS

1. Historical Perspective

- Kshara and Agnikarma are elaborately described in *Sushruta Samhita* (Chikitsasthana, Nidanasthana, Sharirasthana).
- Kshara Karma involves preparation of plant-based alkalis (*Kshara Sutra* or liquid paste), applied to lesions for chemical cauterization.
- Agnikarma uses heated instruments (metal rods, tripod, or iron cautery) for precise thermal injury or ablation.

2. Classification and Types

- **Kshara Karma:**
 - *Pratisarniya Kshara* (applied locally for ulcers, fistula).
 - *Nishkarsha Kshara* (used for deep-seated tissues, warts).
 - *Kshara Sutra* (thread medicated with Kshara for fistula-in-ano).
- **Agnikarma:**
 - *Shushkagni* (dry cauterization) for musculoskeletal pain.
 - *Dravagni* (heated medicated liquids) for tissue modification and chronic ulcers.

3. Indications

- **Kshara Karma:** Fistula-in-ano, hemorrhoids, polyps, warts, ulcers, and chronic wounds.
- **Agnikarma:** Musculoskeletal pain (arthritis, frozen shoulder), plantar warts, chronic ulcers, ocular disorders, ENT conditions.

4. Procedural Details

- **Kshara Karma:**
 - Cleaning and preparation of the lesion.
 - Application of Kshara paste or thread with specific timing and depth.

- Dressing and follow-up for healing.
- **Agnikarma:**
- Determination of target tissue.
- Application of heated instrument, duration control to prevent excess damage.
- Post-operative care including herbal oils, bandaging, and dietetic recommendations.

5. Mechanism of Action

- Kshara provides chemical cauterization, lyses necrotic tissue, induces local inflammation, and promotes granulation.
- Agnikarma induces controlled tissue necrosis, reduces hypertonicity, relieves pain, and accelerates repair.

6. Modern Evidence

- Clinical trials show Kshara Sutra therapy for fistula-in-ano has high success rates (~80–95%) with minimal recurrence.
- Studies report reduction of hemorrhoidal symptoms and healing of chronic ulcers with Kshara application.
- Agnikarma effectively reduces musculoskeletal pain, improves joint mobility, and promotes local healing.
- Herbal adjuncts enhance antimicrobial, anti-inflammatory, and regenerative effects.

7. Complications and Safety

- Mild pain, local irritation, or delayed healing may occur.
- Proper technique, dosage, and post-operative care reduce risks.
- Comparative studies show Kshara and Agnikarma are less invasive than conventional surgery with fewer systemic complications.

8. Integration and Preventive Aspects

- These techniques complement modern minimally invasive procedures.
- Dietary regulation, Rasayana, and hygiene are emphasized for sustained healing.
- Potential use in chronic, refractory, or poor surgical candidates.

Kshara Karma and Agnikarma provide precise, effective, and minimally invasive interventions with demonstrated clinical efficacy in multiple conditions. Modern validation supports their integration into contemporary practice.

DISCUSSION

Kshara Karma and Agnikarma demonstrate the

advanced understanding of tissue pathology and surgical intervention in classical Ayurveda. Both techniques embody the principles of precision, minimal invasiveness, and Dosha-based management, reflecting a balance between local and systemic therapy^[16].

Correlation with Modern Evidence:^[17]

- **Kshara Karma** is comparable to chemical cauterization and minimally invasive procedures in modern surgery. Studies report high success rates in fistula-in-ano, hemorrhoids, and chronic ulcers with minimal recurrence and complications. The medicated Kshara thread (*Kshara Sutra*) provides continuous chemical debridement while maintaining tissue integrity.
- **Agnikarma** parallels modern thermal cautery and physiotherapeutic heat applications. It has demonstrated effectiveness in musculoskeletal pain management, plantar warts, and chronic ulcers, reducing inflammation and stimulating tissue repair. Controlled thermal injury induces local vasodilation, increases cellular metabolism, and promotes healing, consistent with contemporary wound care principles.

Advantages:^[18]

- Minimally invasive, preserving surrounding healthy tissue.
- Reduced systemic complications compared to conventional surgery.
- Cost-effective and applicable in resource-limited settings.
- Integration of herbal formulations enhances antimicrobial and regenerative effects.

Limitations and Gaps:^[19]

- Limited standardized protocols for Kshara and Agnikarma applications in contemporary clinical practice.
- Few randomized controlled trials with adequate sample size and long-term follow-up.
- Variability in preparation of Kshara and techniques may influence outcomes.
- Lack of integration into mainstream surgical training curricula.

Future Prospects:^[20]

- Translational research to optimize concentration, duration, and method of Kshara and Agnikarma for diverse clinical conditions.

- Comparative studies with modern minimally invasive surgical techniques to establish efficacy, safety, and cost-effectiveness.
- Standardization of medicated Kshara and thermal devices for consistent clinical results.
- Development of integrative protocols combining Ayurveda therapies with conventional wound management, physiotherapy, and post-operative rehabilitation.

Kshara Karma and Agnikarma represent scientifically rational, clinically effective, and historically validated surgical interventions. Evidence-based integration into contemporary healthcare can expand therapeutic options, particularly in chronic and refractory conditions, with enhanced patient outcomes and reduced complications.

CONCLUSION

Kshara Karma and Agnikarma, as detailed in Samhitas, reflect the advanced surgical knowledge of classical Ayurveda. Both techniques utilize precise chemical or thermal action to treat chronic and acute conditions, combining therapeutic efficacy with minimal invasiveness.

Kshara Karma effectively manages anorectal disorders, chronic ulcers, warts, and fistula-in-ano. The continuous chemical debridement provided by medicated Kshara threads accelerates healing and reduces recurrence. Agnikarma, employing controlled thermal cauterization, demonstrates efficacy in musculoskeletal pain, plantar warts, and localized chronic lesions, promoting tissue regeneration and functional recovery.

Modern studies corroborate these classical practices, showing anti-inflammatory, antimicrobial, and tissue regenerative properties of Kshara formulations and Agnikarma techniques. Both therapies are cost-effective, safe, and feasible in resource-limited settings. Despite these advantages, limitations such as variability in technique, lack of standardization, and limited clinical trials exist.

Future research should focus on translational studies, standardization of procedures, and integration into contemporary medical practice. Combining Kshara Karma and Agnikarma with modern minimally invasive approaches, physiotherapy, and herbal adjuvants can enhance therapeutic outcomes, especially in chronic, refractory, and complex cases.

In conclusion, Kshara Karma and Agnikarma provide evidence-informed, historically validated, and clinically effective interventions. Their systematic study and integration into modern surgical and therapeutic protocols can contribute significantly to holistic, patient-centered, and minimally invasive healthcare.

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