

ROLE OF AYURVEDA IN THE MANAGEMENT OF ACUTE POISONING: A REVIEW

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ABSTRACT

Acute poisoning is a major medical emergency and a significant contributor to global morbidity and mortality, particularly in low- and middle-income countries. Poisoning from pesticides, pharmaceuticals, household chemicals, heavy metals, poisonous plants, and animal envenomation remains a substantial public health challenge requiring rapid diagnosis and timely intervention. Contemporary management focuses on stabilization of airway, breathing, circulation, gastrointestinal decontamination, antidotal therapy, and supportive care. However, the increasing burden of poisoning, limited availability of specific antidotes, and complications associated with certain toxic exposures highlight the need for complementary therapeutic approaches. *Ayurveda*, through its specialized branch *Agadtantra*,

provides a systematic framework for the identification, classification, diagnosis, prognosis, and treatment of poisoning. Classical Ayurvedic texts describe various categories of poisons, their pharmacodynamic properties, stages of toxicity, and therapeutic interventions including *Vamana*, *Virechana*, *Agada Yoga*, *Prativisha*, *local therapies*, dietary modifications, and rejuvenative measures. Several medicinal plants traditionally classified as *Vishaghna Dravyas* have demonstrated antioxidant, anti-inflammatory, hepatoprotective, nephroprotective, and immunomodulatory activities in experimental studies. This narrative review critically examines the classical *Ayurvedic* principles of acute poisoning management, correlates them with contemporary toxicological concepts, and evaluates available scientific evidence supporting *Ayurvedic* interventions. The review also highlights current research gaps and future opportunities for integrating evidence-based Ayurvedic approaches into modern emergency toxicology.

KEYWORDS: Acute poisoning, *Agad Tantra*, *Ayurveda*, *Visha*, *Vishaghna Dravya*, Antidote, Emergency toxicology, Integrative medicine.

INTRODUCTION

Acute poisoning remains one of the leading causes of emergency department admissions worldwide and continues to impose a considerable burden on healthcare systems, particularly in developing countries. According to the World Health Organization (WHO), hundreds of thousands of deaths occur annually due to accidental and intentional poisoning, with pesticides, pharmaceuticals, industrial chemicals, alcohols, and household toxins accounting for a substantial proportion of cases. Delayed recognition and inadequate treatment contribute significantly to mortality and long-term disability, emphasizing the importance of early diagnosis and prompt intervention.^[1]

Modern management of acute poisoning is primarily based on rapid assessment, stabilization of airway, breathing, and circulation (ABC), prevention of further toxin absorption, administration of specific antidotes whenever available, enhancement of poison elimination, and intensive supportive care. Although advances in analytical toxicology and critical care have substantially improved patient outcomes, several challenges remain, including the emergence of novel psychoactive substances, increasing incidence of multidrug poisoning, limited access to poison information services, and the absence of specific antidotes for many toxic agents.

Ayurveda addresses toxicology through *Agad Tantra*, one of the eight principal branches (*Ashtanga Ayurveda*). The term *Agada* literally denotes a substance or formulation capable of neutralizing or destroying the harmful effects of poison. Classical treatises such as the *Charaka Samhita*, *Sushruta Samhita*, and *Ashtanga Hridaya* describe poisoning as a rapidly progressive pathological condition requiring immediate therapeutic intervention. These texts classify poisons according to their origin, physicochemical characteristics, and clinical manifestations, while also outlining detailed principles of diagnosis, prognosis, emergency management, and preventive measures.^[2-4]

Unlike contemporary toxicology, which primarily emphasizes chemical neutralization and supportive treatment, *Ayurvedic* management adopts a holistic approach aimed at eliminating toxins, restoring physiological balance, protecting vital organs, and promoting tissue recovery. Therapeutic interventions include purification procedures (*Shodhana*), administration of *Agada Yogas*, use of *Vishaghna Dravyas*, dietary regulation (*Pathya*), and

supportive therapies tailored to the patient's constitution and clinical condition.

Over the past two decades, increasing scientific interest has focused on validating traditional *Ayurvedic* antitoxic therapies. Experimental studies have demonstrated antioxidant, hepatoprotective, nephroprotective, anti-inflammatory, and immunomodulatory properties of several classical *Vishaghna* herbs, suggesting potential complementary roles alongside modern medical treatment. Nevertheless, robust clinical evidence remains limited, and further well-designed experimental and clinical studies are required before widespread integration into emergency toxicology can be recommended.^[5-7]

The present review aims to critically evaluate the role of *Ayurveda* in the management of acute poisoning by integrating classical *Ayurvedic* concepts with contemporary toxicological evidence. It also highlights current research gaps and future directions for developing evidence-based integrative approaches in emergency poison management.

Epidemiology and Burden of Acute Poisoning

Acute poisoning is a major public health problem and one of the most common medical emergencies worldwide. It accounts for a substantial number of emergency department visits and hospital admissions each year. The incidence and pattern of poisoning vary according to geographical region, socioeconomic conditions, occupational exposure, and the availability of toxic substances. Common causes include pesticides, pharmaceutical drugs, household chemicals, poisonous plants, industrial chemicals, and animal envenomation.

In developing countries such as India, pesticide poisoning remains the leading cause of severe poisoning because of easy accessibility and widespread agricultural use. Pharmaceutical overdoses, corrosive substances, and household chemicals are also important contributors. Recent Indian studies indicate that the epidemiology of poisoning is changing, with increasing cases related to medications and recreational substances in urban populations. Acute poisoning may occur accidentally, occupationally, or intentionally for self-harm. Mortality depends on the type of poison, quantity ingested, time to hospital presentation, and availability of appropriate treatment. Early diagnosis, prompt resuscitation, gastrointestinal decontamination when indicated, administration of specific antidotes, and intensive supportive care are the cornerstones of successful management.^[8]

From an *Ayurvedic* perspective, poisoning (*Visha*) is considered a rapidly progressive

condition that can affect all *Doshas, Dhatus, and Srotas*, eventually threatening life if not treated immediately. This concept aligns with the modern understanding that many poisons produce rapid systemic toxicity requiring urgent intervention. The detailed principles described in *Agad Tantra* therefore remain relevant in understanding the pathogenesis and supportive management of acute poisoning alongside contemporary emergency care.

Concept of *Visha* in *Ayurveda*

The science of toxicology in *Ayurveda* is known as *Agad Tantra*, one of the eight classical branches (*Ashtanga Ayurveda*). The term *Visha* refers to any substance that, after entering the body, disturbs the normal physiological functions and produces harmful or life-threatening effects. Classical *Ayurvedic* texts describe poison as a rapidly acting substance capable of spreading throughout the body, vitiating the *Doshas, Dhatus, and Srotas*, and leading to severe systemic manifestations if not treated promptly.^[9-11]

According to the *Sushruta Samhita*, poison possesses ten characteristic properties (*Visha Guna*): *Laghu* (light), *Ruksha* (dry), *Ashu* (rapid acting), *Vishada* (non-slimy), *Vyavayi* (rapid systemic spread before digestion), *Tikshna* (sharp), *Vikasi* (causing tissue disintegration), *Sukshma* (penetrating minute channels), *Ushna* (hot), and *Anirdeshya Rasa* (indefinable taste). These properties explain the rapid onset, systemic dissemination, and severe clinical manifestations observed in acute poisoning.^[10]

Ayurveda classifies poisons into *Sthavara Visha* (plant and mineral origin), *Jangama Visha* (animal origin), *Kritrima Visha* (artificial or synthetic poisons), *Gara Visha* (compound or slow-acting poisons), and *Dushi Visha* (latent or residual poisons). This classification reflects differences in the source, mode of action, and clinical presentation of poisoning and shows conceptual similarities to the modern classification based on origin and toxicological effects.

The pathogenesis (*Samprapti*) of poisoning begins with the entry of poison into the body through ingestion, inhalation, injection, or skin contact. Because of its *Tikshna*, *Vyavayi*, and *Sukshma* properties, poison rapidly spreads through the circulation, disturbs the *Tridosha*, impairs tissue function, and affects vital organs such as the heart, brain, liver, and kidneys. Early recognition and immediate treatment are therefore considered essential to prevent irreversible damage and death.

The primary objective of *Agad Tantra* is to neutralize or eliminate the poison, restore

physiological balance, protect vital organs, and prevent complications. These principles closely parallel the modern goals of emergency toxicology, which include preventing further absorption of toxins, enhancing elimination, administering antidotes when available, and providing supportive care.^[12]

Principles of Ayurvedic Management of Acute Poisoning

The management of poisoning in *Agad Tantra* is based on the principle of early recognition, prompt elimination of poison, neutralization of toxic effects, protection of vital organs, and restoration of normal physiological functions. Classical *Ayurvedic* texts emphasize that treatment should be initiated immediately because poison possesses properties such as *Ashukari* (rapid acting), *Tikshna* (sharp), and *Vyavayi* (rapidly spreading), which facilitate its quick dissemination throughout the body. The choice of treatment depends on the type of poison, route of exposure, stage of poisoning, and the patient's strength (*Bala*).

Major Principles of Ayurvedic Management

1. Nidana Parivarjana (Removal of the Cause)

- * Immediate discontinuation of exposure to the poisonous substance.
- * Removal of contaminated food, drugs, or environmental toxins.

2. Visha Nirharana (Elimination of Poison)

- * Vamana (therapeutic emesis): Indicated in suitable patients with recent oral poisoning to expel undigested poison from the stomach.
- * Virechana (therapeutic purgation): Used to eliminate toxins that have progressed into the gastrointestinal tract and lower channels.
- * These procedures should be performed only after proper patient assessment and are not substitutes for modern emergency stabilization.

3. Agada Prayoga (Administration of Antidotal Formulations)

- * Administration of classical Agada Yogas such as Bilwadi Agada, Mahagada, and Mrutasanjeevani Agada, selected according to the type of poisoning and clinical condition.
- * These formulations are intended to neutralize poison, reduce toxicity, and support recovery.

4. Vishaghna Dravya (Use of Antitoxic Herbs)

- * Herbs including Shirisha (*Albizia lebbek*), Haridra (*Curcuma longa*), Guduchi (*Tinospora cordifolia*), and Yashtimadhu (*Glycyrrhiza glabra*) are described for their antitoxic and protective properties.
- * Experimental studies suggest antioxidant, anti-inflammatory, hepatoprotective, and nephroprotective activities for several of these herbs, although stronger clinical evidence is needed.

5. Prativisha (Specific Antidotal Measures)

- * Administration of antidotal therapies described in classical texts for particular poisons, where indicated.

6. Supportive Therapy

- * Maintenance of hydration and nutrition.
- * Management of complications.
- * Use of Rasayana therapies during recovery to promote tissue repair and improve strength.

7. Pathya–Apathya (Diet and Lifestyle)

- * Easily digestible, light diet during the acute phase.
- * Avoidance of incompatible foods, alcohol, and substances that may aggravate toxic effects.

Vishaghna Drugs and Agada Formulations

The management of poisoning in Ayurveda relies on Vishaghna Dravyas (antitoxic herbs) and Agada Yogas (antidotal formulations). These drugs are described in the classical texts for neutralizing the toxic effects of poisons, protecting vital organs, and promoting recovery. Modern pharmacological studies suggest that many Vishaghna herbs possess antioxidant, anti-inflammatory, hepatoprotective, nephroprotective, antimicrobial, and immunomodulatory activities, which may contribute to their traditional use in toxicological conditions.

Table 1: Important Vishaghna Drugs Used in Acute Poisoning.^[13,14]

Drug	Botanical name	Classical action	Pharmacological activity
Shirisha	Albizia lebbeck	Vishaghna, antidotal, reduces venom toxicity	Antioxidant, anti-inflammatory, antiallergic
Haridra	Curcuma longa	Vishaghna, Kusthaghna	Antioxidant, hepatoprotective, anti-inflammatory
Guduchi	Tinospora cordifolia	Rasayana, Vishaghna	Immunomodulatory, hepatoprotective
Yashtimadhu	Glycyrrhiza glabra	Pittahara, Vishaghna	Hepatoprotective, antioxidant
Nimba	Azadirachta indica	Krimighna, Vishaghna	Antimicrobial, anti-inflammatory
Ativisha	Aconitum heterophyllum	Vishaghna, Jwaraghna	Antidiarrheal, anti-inflammatory

Table 2: Important Agada Formulations.^[15,16]

Agada formulation	Main indication	Classical source
<i>Bilwadi Agada</i>	Acute poisoning, insect bites, scorpion sting, Gara Visha	<i>Ashtanga Hridaya</i>
<i>Shirishadi Agada</i>	Snakebite, insect bite, scorpion sting, rat bite	<i>Ashtanga Hridaya</i>
<i>Dooshivishari Agada</i>	Dushi Visha (chronic or residual poisoning)	<i>Sushruta Samhita</i>
<i>Mahagada</i>	Various Sthavara and Jangama poisoning	Classical Ayurvedic texts
<i>Mahasugandhi Agada</i>	Toxicological disorders and supportive care	Classical Ayurvedic texts

Vishaghna drugs and *Agada* formulations constitute the cornerstone of *Ayurvedic* toxicology. These preparations are intended to neutralize toxins, alleviate systemic manifestations, and support recovery. Experimental studies have demonstrated promising pharmacological properties for several ingredients, particularly *Shirisha*, *Haridra*, and *Guduchi*. However, despite encouraging preclinical evidence, high-quality clinical trials evaluating their effectiveness in acute poisoning remain limited. Consequently, these formulations should be considered complementary to standard emergency management rather than replacements for evidence-based toxicological care.

***Chaturvimshati Upakrama* (Twenty-Four Therapeutic Measures)**

Ayurveda describes *Chaturvimshati Upakrama* (24 therapeutic measures) as a comprehensive approach for the management of poisoning. These interventions aim to prevent the absorption

and systemic spread of toxins, neutralize their effects, eliminate them from the body, protect vital organs, and restore physiological balance. The therapeutic measures include local procedures such as *Arishta Bandhana* (tourniquet application), *Utkartana* (incision), *Nishpeedana* (squeezing), *Achushana* (suction), *Agni Karma* (cauterization), *Parisheka* (irrigation), and *Lepa* (topical application), as well as systemic therapies including *Vamana*, *Virechana*, *Nasya*, *Dhuma*, *Raktamokshana*, *Sneha*, *Agada* (antidotal therapy), *Hridayavarana* (cardiac protection), *Sanjnasthapana* (restoration of consciousness), appropriate *Pathya Ahara* (dietary management), and *Mritasanjeevani* formulations for critically ill patients. These measures are selected according to the type, route, severity, and stage of poisoning and reflect the holistic principles of *Agada Tantra*.

Scientific Evidence and Research

Scientific studies suggest that several *Ayurvedic Vishaghna* herbs and *Agada* formulations possess antioxidant, anti-inflammatory, hepatoprotective, nephroprotective, and immunomodulatory properties that may help reduce toxin-induced tissue damage. Experimental studies have demonstrated protective effects of herbs such as *Curcuma longa*, *Tinospora cordifolia*, *Glycyrrhiza glabra*, and *Azadirachta indica* against chemical and drug-induced toxicity. Limited preclinical and clinical studies on classical formulations like *Bilwadi Agada* and *Dooshivishari Agada* also indicate potential benefits as adjunctive therapy in poisoning. However, high-quality randomized clinical trials are limited, and further standardized research is needed to establish their efficacy and safety in the management of acute poisoning.^[18,19]

Integrative Approach

An integrative approach combines the strengths of modern emergency medicine with supportive Ayurvedic interventions for the management of acute poisoning. Immediate stabilization of the patient using airway, breathing, circulation (ABC), decontamination, antidotes, and intensive care remains the primary treatment. Once the patient is stabilized, *Ayurvedic* therapies such as *Agada* formulations, *Vishaghna* herbs, appropriate *Pathya-Apathya* (dietary measures), and *Rasayana* therapy may be used as supportive measures to promote detoxification, protect vital organs, reduce complications, and facilitate recovery. This complementary approach has the potential to improve patient outcomes; however, further well-designed clinical studies are required to establish its efficacy and safety.

Challenges and Future Directions

Although *Ayurveda* offers a comprehensive approach to poisoning management, several challenges limit its widespread clinical acceptance. Most available evidence is based on classical texts, experimental studies, or small clinical trials, with limited high-quality randomized controlled trials. Standardization of *Agada* formulations, quality control of herbal medicines, and scientific validation of their safety and efficacy remain essential. Variability in herbal composition, dosage, and preparation methods also affects reproducibility of research findings.

Future research should focus on multicenter clinical trials, pharmacological and toxicological evaluation of classical formulations, identification of bioactive compounds, and elucidation of their mechanisms of action using modern analytical techniques. Integrating *Ayurvedic* therapies with evidence-based emergency toxicology, along with interdisciplinary collaboration among *Ayurvedic* physicians, toxicologists, and researchers, may help develop standardized, safe, and effective protocols for the management of acute poisoning. Such efforts can strengthen the scientific foundation of *Agadtantra* and promote its role as a complementary approach in modern healthcare.

CONCLUSION

Acute poisoning is a life-threatening medical emergency that requires early diagnosis, prompt intervention, and appropriate supportive care to reduce morbidity and mortality. Modern medicine plays a vital role in emergency stabilization through decontamination, antidote administration, and intensive care management. *Ayurveda*, through the principles of *Agada* Tantra, provides a comprehensive and holistic approach by emphasizing early identification of poisoning, elimination or neutralization of toxins, use of *Vishaghna* herbs and *Agada* formulations, dietary regulation (*Pathya*), and rejuvenative (*Rasayana*) therapy to promote recovery and restore physiological balance.

Several *Ayurvedic* medicinal plants have demonstrated antioxidant, anti-inflammatory, hepatoprotective, nephroprotective, and immunomodulatory activities in experimental studies, supporting their potential role as adjunctive therapies in poisoning management. However, the current scientific evidence is limited by the scarcity of large-scale, high-quality clinical trials and standardized treatment protocols. Therefore, rigorous pharmacological research, multicenter clinical studies, and standardization of classical formulations are essential to establish their safety and efficacy.

An evidence-based integrative approach that combines the strengths of modern emergency toxicology with validated Ayurvedic interventions may enhance patient recovery, reduce toxin-induced organ damage, and improve overall clinical outcomes. Continued research and interdisciplinary collaboration will be crucial to strengthen the scientific basis of Agada Tantra and expand its role in the comprehensive management of acute poisoning.

REFERENCES

1. World Health Organization. Poisoning. Geneva: World Health Organization.
2. Charaka Samhita. Chikitsa Sthana, Vishachikitsa Adhyaya.
3. Sushruta Samhita. Kalpa Sthana.
4. Ashtanga Hridaya. Uttara Sthana.
5. Kumar P, Namewar P. Role of General Principles of Agad Tantra in Diagnosis and Management of Toxicological Conditions: A Comprehensive Review. J Neonatal Surg, 2025.
6. Joshi SS, Wadkar SD. General Treatment Protocol of Poisoning and Twenty-Four Treatment Modalities by Acharya Charaka: A Review. Int J Ayurveda Pharm Res., 2019.
7. Parasuraman S. Toxicological screening. J Pharmacol Pharmacother, 2011; 2(2): 74–79.
8. World Health Organization. Preventing and reducing poisoning.
9. Charaka Samhita. Chikitsa Sthana, Vishachikitsa Adhyaya. Varanasi: Chaukhambha Orientalia.
10. Sushruta Samhita. Kalpa Sthana. Varanasi: Chaukhambha Orientalia.
11. Ashtanga Hridaya. Uttara Sthana. Varanasi: Chaukhambha Krishnadas Academy.
12. Joshi SS, Wadkar SD. General Treatment Protocol of Poisoning and Twenty-Four Treatment Modalities by Acharya Charaka: A Review. Int J Ayurveda Pharm Res., 2019.
13. A Review on Concept of Vishaghna Dravya (Anti-toxic Drugs) in Ayurveda.
14. A Review on Pharmacological and Therapeutic Aspect of Shirishadi Agada.
15. An Observational Analysis on Bilwadi Agada and Its Applied Aspect.
16. A Critical Review on Dooshivishari Agada.
17. Joshi SS. Concept of Chaturvimshati Upakrama in Visha Chikitsa: A Review, 2019.
18. Singh SS, Pandey SC, Srivastava S, et al. Indian J Pharmacol, 2003; 35: 83–91.
19. Asl MN, Hosseinzadeh H. Phytother Res., 2008; 22(6): 709–724.