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## Research Article

## Ayurvedic Management of Poisoning

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### Abstract

Poisoning remains a significant global health concern that demands swift and effective treatment. Ayurveda, through its specialized branch of Agada Tantra, offers a comprehensive and holistic approach to the prevention, diagnosis, and treatment of various types of poisoning, including those from plants, animals, minerals, and artificial compounds. This research explores the classification of poisons in classical Ayurvedic texts and the core principles governing their management. Traditional detoxification therapies such as Vamana, Virechana, Nasya, and Raktamokshana, along with herbal antidotes (Agada Kalpa) and dietary and lifestyle modifications, form the foundation of Ayurvedic intervention. The paper also highlights the Chaturvimshati Upakramas (24 therapeutic measures) as a structured protocol for poison elimination and recovery. Through a synthesis of classical literature and contemporary case studies, the study emphasizes the growing relevance of integrating Ayurvedic and modern toxicological frameworks to enhance clinical outcomes and provide culturally sensitive, evidence-based care. This integrative paradigm underscores Ayurveda's enduring significance in addressing both traditional and emerging toxic threats in the modern world.

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## INTRODUCTION

Poisoning represents a significant global health challenge, requiring rapid, effective, and systematic intervention to prevent severe outcomes. In Ayurveda, this critical issue is addressed by a specialized branch known as Agad Tantra, which focuses on the diagnosis, management, and prevention of poisoning from a wide array of sources. Agad Tantra draws on the ancient wisdom of Ayurvedic texts, offering a holistic framework to understand the properties and effects of various toxins, whether derived from plants, animals, minerals, or chemicals (Manohar, 2014).

Within this system, Ayurveda emphasizes not only the immediate clinical management of poisoning but also the unique constitution (*prakriti*) of each individual, recognizing that toxins impact people differently based on their doshic balance (Vata, Pitta, Kapha). This personalized approach entails detailed history taking, clinical assessment, and analysis of dosha involvement to guide specific interventions.

Key methods of Ayurvedic poisoning management include the use of *detoxification therapies* such as Panchakarma (e.g., emesis, purgation, enemas), application of natural antidotes, and dietary and lifestyle modifications all aiming to restore system equilibrium and remove toxins from the body. Furthermore,

Agad Tantra places considerable emphasis on prevention strategies, educating individuals to minimize toxin exposure and enhance natural resilience.

Recent perspectives advocate for an integrative approach, combining Agad Tantra principles with modern toxicology and emergency medicine, to ensure comprehensive, safe, and effective poisoning management. Such a collaborative paradigm leverages the strengths of both systems, potentially improving patient outcomes through evidence-based, individualized care (Ahmed, 2023).

## Overview of Visha (Poison) in Ayurveda

### Definition and Importance

In Ayurveda, Visha refers to any substance which, upon entering the body by ingestion, inhalation, injection, or contact produces harmful effects on the body and mind. Its study and management are a foundational aspect of the Ayurvedic toxicology branch called Agada Tantra. Visha is recognized both for its capacity to cause disease and its pivotal role in spurring the development of antidotes and protective measures.

### Classification of Visha

Ayurvedic texts categorize Visha based on its source and preparation:

Category	Description	Examples
<b>Sthavara Visha</b>	Inanimate poisons from plants, minerals, chemicals	Aconite, opium, mercury
<b>Jangama Visha</b>	Animate poisons from animals (bites, stings) and insects	Snake or scorpion venom
<b>Krithima Visha</b>	Artificial/compound poisons, may include mixtures (Gara, Dushi Visha)	Food poisoning, synthetic toxins (Patil, 2023), (Gupta, 2015)

Some texts further subdivide these, for instance, grouping Sthavara poisons into *Mahavisha* (high potency) and *Upavisha* (less potent).

### Properties (Gunas) of Visha

Visha is considered uniquely harmful in Ayurveda due to a classic set of properties ("gunas"), which explain its rapid and pervasive effect on the body (Deepak Jansevakji Jaiswal, 2023), (C, 2020):

- **Rooksha** (dry)
- **Ushna** (hot)
- **Teekshna** (sharp/penetrating)
- **Sookshma** (subtle, can travel through fine channels)
- **Ashu** (very quick acting)
- **Vyavayi** (diffuses without need for digestion)
- **Vikasi** (spreads expansively)
- **Vishada** (non-sticky)
- **Laghu** (light)
- **Anirdishta Rasa** (indistinct/unrecognizable taste)

These properties help explain why poisons have such rapid, systemic, and potentially fatal action.

### Mechanism of Action

According to Ayurveda, Visha disrupts the body's doshic balance (Vata, Pitta, Kapha), impairs tissues (*dhatus*), and rapidly spreads by entering various channels (*srotas*). Its "vega" (velocity) refers to the stages of how poison moves through and affects the body's tissues, leading to progressive manifestations

from mild symptoms to potentially death if not managed (Shivprasad *et al.*, 2023), (Patil, 2023).

Need for poison management (historical and current)

### Historical Perspective

From ancient times, poisoning has been a persistent threat to human health, arising from natural sources (venomous animals, toxic plants) and intentional acts (warfare, assassination, or accidental exposure). Ayurveda recognized this challenge early, making toxicology (*Agada Tantra*) one of its eight fundamental clinical branches (S. K. and A. Kumar, 2022). Classical texts meticulously classified poisons by source and described detailed antidotal and detoxification protocols. Ancient practitioners were tasked with expertise in identifying poisons, understanding their effects, and delivering lifesaving treatments, skills vital given the real dangers of wildlife, environmental toxins, and deliberate poisonings in society (Manohar, 2014).

### Current Relevance

In the modern era, poisoning is still a significant global health issue, with exposures ranging from household substances, pharmaceuticals, industrial chemicals, to environmental and foodborne toxins. Rapid urbanization and industrialization have introduced new toxic hazards, while traditional risks from envenomation and plant toxins persist, especially in rural and remote settings. Management of poisoning remains a medical emergency, demanding swift diagnosis and intervention to prevent morbidity and mortality. Contemporary toxicology emphasizes standardized guidelines, toxicovigilance, and the availability of poison control centers. In India and globally, the integration of traditional approaches like those of Ayurveda with modern medicine has generated interest, aiming to combine rapid intervention with holistic recovery and

prevention strategies. Furthermore, concerns have emerged regarding the safety of certain traditional preparations, underscoring the need for evidence-based validation and modernization of toxicological practices (Sikder, 2024), (Manohar, 2014). The expertise developed in historical Ayurvedic toxicology is being revisited as public health authorities and practitioners seek more comprehensive and culturally relevant solutions for both old and emerging poisoning threats.

### Types/classification of poisoning in Ayurveda

Ayurveda, through the discipline of *Agada Tantra*, classifies poisoning (*visha*) primarily based on the origin of the toxin:

Category	Subtype	Description & Examples
Natural Poisons	<i>Sthavara Visha</i> (Inanimate)	Poisons from non-living sources, mostly plants (vanaspatic/phyto-poison), minerals (khanija), and metals. Examples: aconite, mercury, dhatura, arsenic.
	<i>Jangama Visha</i> (Animate)	Poisons from living organisms such as animals and insects. Examples: snake, scorpion, spider, dog, and other animal/insect bites or stings.
Artificial Poisons	<i>Krtrima Visha</i> (Compound/Gara Visha)	Poisons that are artificially prepared—often by mixing various substances from both natural categories. Includes compounded toxins, deliberate poison mixtures, slow-acting or food-borne poisons.

Other sub-categories recognized in Ayurveda include:

- **Dushi Visha:** Denatured or residual poisons remaining in the body, often causing chronic or delayed symptoms (D. D. Kumar, 2021).

This classical taxonomy is pivotal in guiding the tailored therapeutic interventions described in traditional texts.

### Present-Day Relevance

The Ayurvedic classification of poisons remains relevant to contemporary toxicology, reflecting common toxic exposures notified in current clinical practice:

- **Drug Overdose:** Analogous to *Gara Visha* or artificial poisons, the concept of intentional or accidental exposure to pharmaceuticals (such as paracetamol, opioids, sedatives) aligns with this category. Ayurvedic approaches consider the combination and cumulative toxicity, much as seen in polypharmacy cases today.
- **Food Contamination:** *Gara Visha* also encompasses slow-acting poisons from tainted food or drink, like foodborne pathogens, pesticide residues, and adulterants. Ayurveda has frameworks for identifying and managing such poisonings with detoxification and antidotal therapies.
- **Heavy Metal Toxicity:** Chronic exposure to metals (lead, arsenic, mercury), sometimes from herbal or mineral remedies themselves, parallels *Sthavara Visha*. Ayurveda provides descriptions of mineral toxicity, symptoms, and attempts at purification or counteraction an issue directly pertinent due to periodic reports of heavy metal contamination in traditional medicines.
- **Envenomation:** Bites and stings from snakes, scorpions, and insects, prevalent in India and globally, remain common emergencies where knowledge of *Jangama*

*Visha* is still applied, especially in rural regions (Manohar, 2014).

- **Chemical and Environmental Exposures:** Modern poisons, including industrial chemicals, solvents, and pollutants, can be classified within the broad category of *Sthavara Visha*.

Ayurveda's detailed, source-based classification and management strategies afford a holistic foundation for both acute and chronic poisoning, and these principles are increasingly revisited for integrated approaches to today's toxicological challenges (Thakare *et al.*, 2022).

*“Agada Tantra describes two types of poisons Natural and Artificial. The Natural poison is classified as inanimate (sthavara) and animate (Jangama). Among the inanimate poison, those of plant origin and toxic minerals, metals found in earth. Among the animate poison include bites of animals, scorpion, insect, snake etc. Artificial poisons are prepared by combining various kinds of animate and inanimate poisons. Intoxication could be from various sources, including plants, birds, insects, animals and reptiles etc.”*

### OBJECTIVE

To explore and evaluate the principles, classifications, and therapeutic interventions of Ayurvedic toxicology (Agada Tantra) in the management of natural and artificial poisons, and to assess their relevance and potential integration with modern toxicological practices.

### RESEARCH METHODOLOGY

This research paper is based on a comprehensive literature review supported by classical Ayurvedic texts and relevant

clinical case studies documented in contemporary journals. The primary sources of data included the Charaka Samhita, Sushruta Samhita, and Ashtanga Hridaya, focusing on sections about Visha Chikitsa (poison management), Agada Tantra (Ayurvedic toxicology), and Chaturvinshati Upakrama (the 24 therapeutic measures). Secondary sources included peer-reviewed articles, research papers, and documented clinical reports published in journals such as AYU, Journal of Ayurveda and Integrative Medicine (J-AIM), Journal of Ayurveda and Integrated Medical Sciences (JAIMS), and indexed databases like PubMed and Google Scholar. The inclusion criteria for literature selection involved studies, reviews, and textual references that addressed Ayurvedic concepts of poisoning, its classification, clinical features, and therapeutic approaches. Only literature written in English or with translated versions of classical Sanskrit texts was included. Studies not directly related to poisoning or lacking therapeutic focus were excluded. A thematic analysis method was employed to extract, organize, and interpret data related to types of poisons, principles of management, therapeutic procedures (e.g., Panchakarma, Shodhana), and the role of specific formulations (Agada, herbal antidotes, and Rasa preparations). Case reports were analyzed descriptively to highlight the clinical application of Ayurvedic treatments and their outcomes. No new clinical or experimental data were generated during this study. All findings are based on secondary analysis of existing literature and documented clinical evidence.

### Management of Poisoning in Ayurveda

**Agada Tantra**, the Ayurvedic branch dedicated to toxicology, employs a holistic and methodical approach to poisoning that integrates detoxification, antidotal therapy, and restoration of physiological balance. Below is an overview of the general line of treatment and the core therapeutic interventions:

#### General Line of Treatment

Ayurvedic management aims to:

- Remove or neutralize the poison from the body.
- Restore doshic balance (Vata, Pitta, Kapha) disrupted by the toxin.
- Re-establish normal function of tissues (*dhatu*), waste products (*mala*), and channels (*srotas*).
- Support vital energy (*ojas*) and recovery of health.

Treatment is individualized, factoring in the source and severity of the poison, patient constitution, compatibility, location, season, and urgency (*Vega*). Ayurveda enumerates twenty-four upakramas (Chaturvimshati Upakrama), a group of therapies specifically suited for all types of poisoning.

Key procedures in the general management of poisoning include:

#### 1. Vamana (Therapeutic Emesis)

Rapid removal of unabsorbed poison from the stomach, especially in cases of oral ingestion. Preferred in the early stage when toxins are confined to the stomach and upper gut. Administration of emetic herbs or drugs to induce vomiting, expelling the offending substance before absorption can occur.

#### 2. Virechana (Purgation)

Eliminates poison that has traversed beyond the stomach, especially those affecting the lower digestive tract and liver. Useful when the toxin is believed to have reached the small intestine and other internal organs. Use of specific purgative agents to induce controlled bowel evacuation and cleanse the alimentary canal.

#### 3. Nasya (Nasal Therapy)

Targets the elimination of poisons that may affect or enter through the nasal cavity or central nervous system. Particularly effective in cases where poison is inhaled, or the nervous system is involved. Nasal administration of medicated oils or powders to expel toxins through the nasal passages and support neurological function.

#### 4. Raktamokshana (Bloodletting)

Removes absorbed poison present in the bloodstream. Recommended for systemic poisoning, especially in cases involving animal bites or stings where the toxin has entered circulation. Techniques like venesection or leech therapy are employed to extract contaminated blood and limit systemic effects.

#### 5. Agada (Antidotes/Neutralizing Agents)

“Agada” refers broadly to antidotal medicines and specific formulation families that counteract poisons. Administered based on the specific type of poison and its effects; can include herbal, mineral, and animal-derived preparations. Formulations such as *Swarna Bhasma* (gold calx), *Godugdha* (cow’s milk), and preparations elaborated under *Agada Yoga* have documented use as antidotes (Akanksha *et al.*, 2023).

#### Supportive and Symptomatic Care

Additional therapies may include topical applications, eye treatments, dietary regulation, and rejuvenating (*rasayana*) medicines to rebuild health. Use of *mantra* (incantation) and other supportive practices is also described, especially in traditional contexts.

#### Integration with Modern Toxicology

While some classical methods are less common in modern clinical emergencies, the principles of early decontamination, elimination, use of neutralizing agents, and supportive care closely align with present-day toxicology. Ongoing research and practice in traditional and remote regions continue to validate and enhance these Ayurvedic protocols for both acute and chronic poisoning scenarios.

*Ayurveda’s Chaturvimshati Upakramas provide a rational, stepwise protocol for the expulsion, neutralization, and elimination of poisons, combining detoxification (Vamana, Virechana, Raktamokshana, Nasya), administration of antidotes (Agada), and comprehensive restoration of systemic balance (A. Kumar et al., 2024).*



### Specific formulations or herbs used

Ayurveda prescribes a variety of Vishaghna (anti-toxic) formulations and herbs for the management of poisoning. Classical formulations, such as those detailed in *Rasayogsagar*, include dozens of specific preparations with antidotal, detoxifying, or restorative properties. These may be plant-based, mineral-based, or herbo-mineral compounds, administered according to the type of poisoning and patient needs (Pandey *et al.*, 2022).

### Key categories and examples include:

- **Herbs:** Ayurveda uses numerous plant-based medicines with reputed detoxifying and anti-toxic actions. Some commonly noted herbs with Vishaghna (anti-poison) effects are:
  - **Haridra** (*Curcuma longa*, turmeric)
  - **Neem** (*Azadirachta indica*)
  - **Guduchi** (*Tinospora cordifolia*)
  - **Amla** (*Emblica officinalis*)
  - **Vasa** (*Adhatoda vasica*)
  - **Yashtimadhu** (*Glycyrrhiza glabra*, licorice)
  - **Kutaja** (*Holarrhena antidysenterica*)
- **Mineral and metal preparations:** Some antidotal formulations include purified and processed metals/minerals (bhasma), such as gold (Swarna), copper, or mercury blends, after traditional detoxification\* (shodhana)\*. However, there are significant safety concerns where purification isn't properly regulated, as some preparations have been found to contain toxic levels of heavy metals (lead, mercury, arsenic) (Ciocan *et al.*, 2021), (Sikder, 2024).
- **Composite anti-poison formulations:** Texts like *Rasayogsagar* list up to 74 specific anti-toxic medicines (Vishaghna formulations), tailored to neutralize or expel different classes of poisons (Pandey *et al.*, 2022).

*Note: While these herbs and formulations are classical, modern use requires strict oversight, quality assurance, and should avoid contaminated or inadequately purified products to prevent secondary poisoning.*

### Diet and Lifestyle Recommendations During Poisoning Treatment

Diet and lifestyle management are emphasized in Ayurveda to support detoxification, minimize further toxin absorption, and promote recovery:

#### Dietary Recommendations:

- **Light, easily digestible foods** (laghu, easily assimilable): e.g., rice gruel (kanji), green gram soup, barley water.
- **Bland, non-irritating food:** minimizes gastrointestinal irritation.
- **Boiled or filtered water only:** to reduce toxin exposure from contaminated sources.
- **Avoid heavy, oily, spicy, sour, or fermented foods:** which can burden digestion and hinder toxin elimination.

- **Temporary fasting** (where appropriate): allows the body to focus resources on detoxification.

### Lifestyle Recommendations

- **Adequate rest and sleep:** supports immune function and recovery.
- **Avoidance of physical exertion, stress, and exposure to heat or sun:** reduces systemic strain.
- **Strict avoidance of known or suspected toxin sources** (e.g., certain foods, suspicious substances, contaminated environments).
- **Maintenance of proper personal hygiene and clean surroundings** to prevent further exposure or secondary infections.
- **Mental calmness:** stress reduction practices, as some texts include mantras and calming therapies to support holistic recovery.

*According to Ayurveda, Nidan Parivarjan (elimination of the cause), Samshodhan Chikitsa (purificatory procedures like Vamana and Virechana), and Prativisha Chikitsa (antidotal therapy) are especially indicated for the management of poisoning, accompanied by appropriate dietary and lifestyle support to maximize effectiveness and promote recovery.*

### The Twenty-Four (Chaturvimshati) Upakramas

The Chaturvimshati Upakramas are the twenty-four fundamental modalities described in Ayurveda particularly by Charaka for the holistic management of poisoning (visha). These methods collectively aim to restrict, neutralize, disintegrate, and eliminate poison from the body, while simultaneously restoring systemic balance and supporting recovery. The modalities are applicable to all types of poisoning, including those from plants, animals, artificial mixtures, and chronic residual poisons (Shreyas S. Joshi, 2019).

### Key Chaturvimshati Upakramas (Twenty-Four Modalities)

#### The full list and their primary roles are as follows:

1. **Mantra** (Chanting of hymns): Used for psychological stabilization and traditional spiritual support.
2. **Arishta Bandhana** (Application of tourniquets): Prevents systemic spread from bite or entry site.
3. **Utkartana** (Incision): Making an incision at the site to help expel poison.
4. **Nishpeedana** (Squeezing): Squeezing the site to extrude poison.
5. **Achushana** (Sucking): Sucking out poison, often with medicinal agents.
6. **Agni Karma** (Cauterization): Application of heat to minimize infection or inactivate the toxin locally.
7. **Parisheka** (Sprinkling/irrigation): Washing or cleansing the poisoned area.
8. **Avagaha** (Immersion bath): Soaking the affected part in medicinal decoctions for absorption or neutralization.
9. **Pralepa/Lepa** (Topical ointments): Application of medicinal pastes to draw out/neutralize poison.

10. **Vamana** (Therapeutic emesis): Inducing vomiting to expel ingested poison.
11. **Virechana** (Purgation): Inducing purgation for poisons further in the GI tract.
12. **Nasya** (Nasal therapy): Administration of medications via the nose, especially for poisons impacting the head or nervous system.
13. **Dhuma** (Medicated fumigation): Inhalation of medicated smoke to neutralize airborne/inhaled toxins or cleanse body channels.
14. **Anjana** (Collyrium/eye treatment): Application in cases where poison affects eyes.
15. **Raktamokshana** (Bloodletting): Removal of poisoned blood for systemic toxicity.
16. **Upadhana** (Medicated application to the scalp): For poisons with CNS involvement.
17. **Hridayavarana** (Heart protection/medications): To protect cardiovascular function during poisoning.
18. **Sandhana** (Binding/splinting): Fixation of limbs, often post-bite or sting.
19. **Santhapana/Sanjnasthapana** (Revival/restoration of consciousness): For comatose or collapsed patients.
20. **Bhojana** (Wholesome diet): Dietary regulation for strength and recovery.
21. **Leha** (Medicated lickable preparations or confections): To aid hydration, nutrition, and sometimes act antidotally.
22. **Prativisha/Agada** (Antidote administration): Use of specific drugs to counteract poison effects.
23. **Sneha** (Oleation/unguent): Internal or external oil application for healing and detoxification.
24. **Mritasanjeevani** (Revival/rescue formulations): Specialized rescue drugs for near-fatal or moribund states, including *Mritasanjeevani Agada*.

### Integration in Practice

Selection of modalities is tailored to the nature of the poison, location and route of entry, patient constitution, severity, and phase of poisoning (S. Kumar & Kumar, 2022). Emphasizes not only acute intervention but supportive and rejuvenative measures, aligning closely with holistic and preventative principles (Kharat, 2024). Many practices (e.g., tourniquets, incision, bloodletting, antidotes, induced emesis) parallel modern emergency toxicology protocols, demonstrating the ongoing relevance and adaptability of these ancient strategies (A. Kumar *et al.*, 2024).

### Ayurvedic Herbs and Remedies

Ayurveda utilizes a variety of herbs and remedies to manage different forms of poisoning ranging from food poisoning to heavy metal toxicity. The approach focuses on detoxifying the body, restoring digestive health, and balancing the doshas through the following key herbs and preparations:

#### Prominent Ayurvedic Herbs

- **Ginger (*Zingiber officinale*)**: Reduces inflammation, calms the stomach, and is especially effective for digestive

disturbances like food poisoning. Commonly consumed as ginger tea to relieve nausea and discomfort.

- **Cumin Seeds (*Cuminum cyminum*)**: Enhance digestion and help with bloating and stomach cramps. Often prepared as a herbal tea.
- **Coriander (*Coriandrum sativum*)**: Soothes nausea and diarrhea. Coriander water (made by soaking seeds) is used for gastrointestinal relief.
- **Fennel Seeds (*Foeniculum vulgare*)**: Ease abdominal pain and improve digestion. Can be chewed raw or taken as tea.
- **Turmeric (*Curcuma longa*)**: Known for anti-inflammatory and antibacterial properties. Used in warm water or milk for systemic and gut detoxification (Biswas *et al.*, 2017).
- **Amla (*Emblica officinalis*/Indian Gooseberry)**: Strengthens digestion and immunity. Consumed as juice or powder for convalescence after poisoning.
- **Mint (*Mentha spp.*)**: Soothes the gut and provides antimicrobial action. Taken as tea or chewed directly to alleviate symptoms.
- **Neem (*Azadirachta indica*)**: Used for its potent detoxifying and blood-cleansing effects, especially in cases of heavy metal poisoning.
- **Guduchi (*Tinospora cordifolia*)**: Supports liver detoxification and immunity; widely recommended for systemic toxin clearance.
- **Triphala**: A blend of three fruits (amla, haritaki, bibhitaki), known for its gentle detoxifying and rejuvenative actions, particularly in heavy metal detox.
- **Kutaja (*Holarrhena antidysenterica*)**: Noted for astringent and digestive-stabilizing action, often prescribed in food poisoning.

### Ayurvedic Formulations

- **Mustarishta**: A classical herbal tonic used to support digestion during recovery from food-related toxins.
- **Rasayana formulations**: Rejuvenative compounds recommended for convalescence and strengthening after detoxification.

### Dietary and Lifestyle Recommendations

**Diet**: Fasting or very light diet in initial stages to allow the digestive tract to recover (e.g., mung dal soup, rice porridge/khichdi). Bland, easily digestible foods (cooked vegetables, plain rice, light broths) during recovery. Avoidance of heavy, oily, spicy, or stale food to minimize further digestive strain. Boiled or filtered water exclusively during and after acute poisoning.

**Lifestyle**: Rest and avoidance of exertion to promote recovery. Emphasis on hygiene (personal and kitchen) washing hands, cooking food thoroughly, and avoiding leftovers to prevent recurrent poisoning. Yoga, meditation, mindfulness: Used for stress reduction and accelerated healing. Panchakarma

therapies may be advised for severe or recurrent cases, facilitating comprehensive detoxification(Ahmed, 2023).

### Safety Considerations

While plant-based remedies have a strong tradition in Ayurveda, cases of toxicity have been reported due to contamination or improper formulation (especially with some mineral and metallic preparations)(Pinto *et al.*, 2014),(Gunturu *et al.*, 2011). Therefore, it is essential to use only certified, quality-controlled products and consult a qualified practitioner, particularly in cases involving heavy metals or severe poisoning.

### Ayurveda vs. Modern Approach

The Ayurvedic and modern approaches to poisoning and toxicology share foundational principles such as the identification, classification, and management of toxins but differ in methodology, scope, and clinical practice. Recent scholarship emphasizes the importance of integrating the

#### Distinctive Features

Aspect	Ayurveda	Modern Approach
<b>Philosophy</b>	Holistic, individualized (Prakriti-based); considers mind, body, and environment	Biomedical, evidence-based, focus on pathophysiology and pharmacology
<b>Sources of Poison</b>	Natural (plant, animal, mineral), artificial; new awareness of environmental and lifestyle poisons	Naturally occurring (biological, chemical), synthetic (pharmaceutical, industrial)
<b>Intervention</b>	Detoxification (Panchakarma), antidotes (Agada Kalpa), Rasayana (rejuvenation), dietary and lifestyle modifications	Antidotes, decontamination (gastric lavage, activated charcoal), supportive and symptomatic care, organ support (ICU, dialysis)
<b>Antidotal Therapy</b>	Herbal/mineral antidotes specific to poison class, used with purification steps	Chemically defined antidotes (e.g., atropine for organophosphates, antivenom for snake bites)
<b>Rejuvenation/Recovery</b>	Rasayana therapy to rebuild tissues and immunity post-detoxification	Rehabilitation and long-term organ monitoring
<b>Safety Considerations</b>	Emphasizes purification but may risk heavy metal contamination if improperly processed	Strict regulation, monitoring for iatrogenic effects or drug toxicity

### Present-Day Relevance and Integration

- **Environmental and Lifestyle Toxins:** Both systems acknowledge emerging risks—air/water pollution, pesticides, drug overdoses, and synthetic chemicals—as key modern toxicological threats(Dr. Debasish Satpathy., 2025).
- **Safety and Efficacy:** Ayurveda's well-documented adverse effects of improper treatment and modern awareness of drug toxicity converge on the need for rigorous, evidence-based safety protocols in both fields(khairnar & Nandedkar, 2024).
- **Treatment of Modern Poisons:** Ayurveda's principles can be applied to new-age toxins, including management of drug-induced toxicity and chronic low-dose exposures. Collaboration is seen as essential for improving outcomes, especially where herbal adjuvants may mitigate the side effects of modern chemotherapies(Manohar, 2014).
- **Evidence Generation:** Efforts are ongoing to validate Ayurvedic treatments through modern research, encouraging a “reverse pharmacology” approach (clinical validation followed by lab studies), while modern medicine is incorporating holistic recovery and lifestyle elements traditionally found in Ayurveda (Chopra *et al.*, 2010).

strengths of both systems to address contemporary toxic exposures.

### Core Similarities

- **Comprehensive Classification:** Both Ayurveda (through *Agada Tantra*) and modern toxicology recognize multiple sources of toxins plant, animal, mineral, artificial, and environmental and categorize them for more targeted intervention.
- **Emphasis on Prevention:** Both systems prioritize recognizing sources of poison (food, environment, medication, industrial chemicals) and advocate preventive strategies to reduce exposure.
- **Stepwise Management:** The central therapeutic aims in both are *elimination of the toxin, neutralization, and restoration of physiological balance* (homeostasis in modern medicine; dosha-samyata in Ayurveda).

### CONCLUSION

Ayurveda, through the specialized discipline of *Agada Tantra*, offers a time-tested, holistic framework for the management of poisoning. Rooted in a deep understanding of the body's physiological and energetic principles, Ayurvedic toxicology addresses not only the elimination of poisons but also the restoration of systemic balance and immunity. Its detailed classification of poisons Sthavara, Jangama, and Krtrima—along with a robust therapeutic arsenal comprising detoxification procedures, antidotal formulations, and supportive care, remains remarkably relevant in today's context of diverse and evolving toxic exposures. The Chaturvimshati Upakramas provide a structured, multifaceted approach adaptable to various types of poisoning, offering both immediate intervention and long-term recovery. Contemporary research and clinical reports increasingly advocate for the integration of Ayurvedic practices with modern emergency toxicology, recognizing the potential for synergistic effects in improving patient outcomes. However, the safe application of Ayurvedic formulations especially those involving metals requires stringent quality control and regulatory oversight. the fusion of ancient Ayurvedic wisdom with contemporary biomedical protocols presents a promising frontier in

toxicology. It ensures not only rapid clinical response but also comprehensive healing and preventive care rooted in personalized medicine. As poisoning continues to pose a complex health challenge, Ayurveda's contributions offer both therapeutic depth and cultural resonance, warranting further research, validation, and integration into mainstream healthcare systems.

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