

## KERALIYA VISHA CHIKITSA: A COMPREHENSIVE REVIEW OF TRADITIONAL AYURVEDIC TOXICOLOGY

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### ABSTRACT

*Keraliya Visha Chikitsa* represents a distinct and highly specialized branch of *Agada Tantra* (toxicology) indigenous to Kerala, India. This tradition is characterized by a unique array of diagnostic, therapeutic, and prognostic methodologies documented in classical Malayalam texts such as *Prayogasamucchaya*, *Kriyakoumudi*, and *Visha Vaidya Jyotsnika*. This article provides a detailed exploration of these practices, which were developed to address the critical need for effective snake bite management in a region where such incidents are historically prevalent. Examine specialized procedures including *Oothu Chikitsa* (blowing therapy), *Thooku Dhara* (medicated stream), and *Karu Prayoga* (parenteral administration), alongside diagnostic tools like *Vishahari Lehya* and prognostic assessments like *Shara*

*Pareeksha*. The review highlights the systemic approach of this tradition, which encompasses emergency first aid (*Atyayika*), stage-based treatment (*Veganusari*), and localized care (*Sthaneeya*). Furthermore, the article analyses the mechanical and pharmacological rationale behind these traditional methods, emphasizing their role as potentially life-saving emergency interventions in *Ayurveda*. Finally, the review concludes that while *Keraliya Visha Chikitsa* has been successfully practiced for generations, there is an urgent need for contemporary scientific validation to ensure these valuable methodologies are preserved and integrated into modern medical frameworks.

**KEYWORDS:** *Keraliya Visha Chikitsa*, *Agada Tantra*, Emergency Management (*Aatyayika*), *Oothu Chikitsa*, *Thookudhara*.

## INTRODUCTION

The traditional snake bite management of Kerala is a living legacy that offers a multifaceted approach to envenomation. While modern interventions like anti-snake venom have become standard, the "Special *Prayogas*" (Special Procedures) of *Keraliya Visha Chikitsa* continue to offer alternative routes of administration and unique therapeutic actions, ranging from simple topical applications (*Lepa*) to complex parenteral procedures.

The methodology for studying *Keraleeya Visha Chikitsa* involves a systematic and scholarly review of foundational Malayalam manuscripts, complemented by the clinical observations and documented experiences of established traditional practitioners known as *Vishavaidyās*. This research framework identifies several core therapeutic strategies that define the tradition's comprehensive approach to toxicology. Central to these is *Aātyayika Chikitsa*, which focuses on immediate emergency interventions and first-aid measures to stabilize the patient. This is followed by *Vegānusari Chikitsa*, where treatment protocols are dynamically adapted to the progressive stages, or *Vegas*, of envenomation as the poison moves through the body. Furthermore, *Dhātugata Chikitsa* provides specialized strategies for targeting the specific tissues, or *Dhatus*, where the poison has deep-seated residence. These traditional frameworks are supported by a unique set of Special Procedures, such as *Oothu* (blowing therapy), *Dhara* (medicated streams), and *Karu* (parenteral administration), all of which are meticulously designed for rapid stabilization and systemic detoxification.

## Analysis of Different Visha Chikitsa Procedure

### Procedures for emergency management

#### 1. *Oothu Chikitsa* (Blowing Therapy)

*Oothu Chikitsa* is a specialized emergency blowing therapy detailed in *Keraleeya Visha Chikitsa* texts, such as *Prayoga Samucchaya*, *Kriya Koumudi* and *Yogaratanakara* primarily used to stabilize patients suffering from severe cobra envenomation. This procedure is indicated when the venom is situated in the first three dhatus, presenting symptoms such as increased temperature, blackish discoloration, drooping eyes, drowsiness, and altered consciousness. During the procedure, the patient sits comfortably while three attendees two at the ears and one at the vertex (*moordhni*) simultaneously blow air into these areas 150 times after thoroughly chewing specific medicinal herbs.<sup>[1]</sup> This technique is believed to work

through the absorption of volatile compounds through the scalp's superficial veins and the stimulation of the Vagus nerve via the auricular branch (Arnold's nerve), which may help slow the heart rate and the systemic spread of venom.<sup>[2]</sup> The selection of drugs for *Oothu* varies according to different authorities and texts, though they generally share *Teekshna* (penetrating) and *Vishaghna* (anti-toxic) properties to arouse the senses and retrieve consciousness. A core combination includes *Viswa* (*Zingiber officinale*), *Maricha* (*Piper nigrum*), *Dusparsa* (*Tragia involucrata*), and *Vishavega* (*Aristolochia indica*).<sup>[3]</sup> However, the text *Kriyakoumudi* offers alternative combinations, such as a mix of *Viswa* and *Vishavega*, a blend of *Trikatu* (*Sunthi*, *Maricha*, *Pippali*) with *Thrittapatra* (*Ocimum tenuiflorum*), or a trio of *Vishavega*, *Dusparsa*, and *Vacha* (*Acorus calamus*). Many of these ingredients, like *Vacha*, act as nerve tonics to address mental disorders and depression, while others like *Maricha* and *Vishavega* are noted for their direct antidote and anti-poisonous activities. Together, these formulations provide an economical and rapid emergency response when modern medical intervention is delayed.<sup>[4]</sup>

## 2. *Thooku Dhara* (Medicated Stream)

*Thookudhara* is a specialized procedure in *Keraleeya Visha Chikitsa* primarily indicated for managing the complications of *Mandali Visha* (Viper envenomation), where *Pitta* is the predominant *dosha*. It is highly effective for reducing *Vishaja Sopha* (toxic swelling) and alleviating symptoms like *Daha* (burning sensation), *Pitta Vikaras*, and various systemic distresses caused by snake venom. The procedure involves grounding a specific set of drugs including *Kāraskara Pullunni* (*Loranthus ingiflorus*), *Chandana* (*Santalum album*), *Shatāvāri* (*Asparagus racemosus*), *Kumāri* (*Aloe vera*), *Kushmānda latha* (*Benincasa hispida*), and *Eranda Patram* (*Ricinus communis*) squeezing them to extract the *Swarasa* (juice), and filtering it through a cloth. This medicinal juice is then poured into a *Dhara* pot suspended by a rope approximately half an inch above the affected area and poured continuously.<sup>[5]</sup>

The pharmacological action of *Thookudhara* relies on the *Sheetha Veerya* (cold potency), *Madhura Vipaka* (sweet post-digestive effect), and *Pitta-Raktha Shamaka* properties of the ingredients, which directly counteract the *Pitta-Raktha* vitiation and increased capillary permeability seen in viper bites. While the standard formulation utilizes the aforementioned six herbs, an alternative opinion suggests the use of *Uri Thookki* (*Aristolochia indica* / *Iswaramooli*) for the *Dhara*. As an easily available and practical *yoga* (formulation),

*Thookudhara* serves as a vital traditional management technique for localized and systemic venom effects, though further studies are recommended to fully validate its efficacy.<sup>[6]</sup>

### 3. *Karu Prayoga* (Parenteral Administration)<sup>[7,8]</sup>

*Karu Prayoga* is a specialized and unique parenteral drug administration technique detailed in *Keraliya Visha Granthas*, primarily utilized as a life-saving measure in emergency snakebite (*Sarpavisha*) cases where the patient is unconscious or unable to swallow. This procedure involves the insertion of a specific instrument, known as a *Karu*, into the natural orifices of the body including the anus (*Guda*), urinary tract (*Mootradwara*), ears (*Karnam*), nose (*Nasika*), or vagina (*yoni*) to facilitate the direct and fastest possible systemic absorption of medicine. Constructed from copper (*Chemp*) and designed in the shape of a *Datura* flower, the *Karu* serves as a delivery vessel that bypasses the gastrointestinal tract, making it ideal for patients experiencing nausea, vomiting, or those requiring drugs that would otherwise be degraded by gastric mucosa or high hepatic first-pass metabolism. The dimensions of the instrument are gender-specific, with a prescribed length of 6 *Angula* for males and 8 *Angula* for females.

The clinical application and medicinal combinations used in *Karu Prayoga* vary significantly based on the type of envenomation and the specific orifice targeted. For instance, in *Rakta Mandali* bites where life signs appear faint, a combination of *Manasila* and *Parada* is administered via the rectum, while *Saindhava* and *Hingula* ground with *Jambeera beeja* may be used through the urinary tract. In cases of *Rajila* (krait) bites, one *panatooka* of *Rasa* (mercury) is placed in a *Karu* inserted into the ear, and for *Venthiran* bites after seven days, a mixture of three *Panatooka* of *Rasa* with *Manasila* and frog fat (*tavala vasa*) is introduced through the rectal margin. The procedure itself involves filling the *Karu* with the chosen drug, inserting it into the appropriate orifice, and then applying heat often by placing it near a fire or using a lighted wick while simultaneously blowing air to force the medicated vapours or substances into the body for immediate effect. This method, often considered a form of *Prativisha Prayoga*, leverages the systemic circulation via the inferior and middle rectal veins to provide rapid therapeutic intervention in critical conditions.

### 4. Diagnostic & Prognostic Tools

- *Vishahaari Leha* is a traditional Ayurvedic formulation widely utilized by *Keraleeya Vishavaidyas* in *Sarpavishachikitsa* (snakebite management) as a confirmatory test and a tool to identify the specific type of snake involved. This potent medicinal *Lehya* is documented in

esteemed classical texts including *Prayogasamuchaya*, *Vishavaidyasarasamuchaya*, and *Kriyakaumudi*. The primary ingredients consist of *Tambula* (Betel leaf), *Mrudangaphala beeja* (known as *Attanga* or Luffa amara), *Nimbataila* (Neem oil), *Sudha Parada* (Purified Mercury), and *Sudha Gandhaka* (Purified Sulphur). Various classical sources offer slight variations in proportions; for instance, *Kriyakaumudi* suggests using the juice of 500 betel leaves, while *Prayogasamuchaya* specifies mixing two *prastha* of betel leaf juice with one *nazhi* of *Attanga* paste. *Kasyapiya manipravala* notes a ratio involving 1,000 grains' weight of mercury and grinding seeds to five times the quantity of other components. The preparation of this *leha* is unique because it eschews standard *leha* manufacturing methods in favour of manual trituration in a wide-mouthed bronze vessel, commonly called an *Uruli*. The process begins by mixing one *kudava* (approx. 300 ml) of fine *Mrudangaphala beeja* paste with two *prastha* (approx. 2.4 liters) of *Tambula swarasa*. This mixture is filtered through a cloth, and the resulting filtrate is combined with an equal amount of *nimbataila*. Purified mercury and sulphur, each at 1/5th the quantity of the mixture, are then added. The blend is triturated by hand until it is entirely moisture-free, then stored in a glass container. For administration, approximately one *panathookka* (2.5g) of the *leha* is smeared on a betel leaf for the patient to chew, or it may be applied directly to the bite wound. A defining characteristic of *Vishahaari Leha* is its diagnostic function, where the patient's perception of taste reveals the nature of the envenomation. If the patient perceives a *Katu* (pungent/spicy) taste, it indicates a bite from a *Darveekara* (Cobra). An *Amla* (sour) taste suggests a *Mandali* (Viper), while a *Madhura* (sweet) taste confirms a *Rajila* (Krait) bite. Conversely, if the patient immediately tastes *Tiktha* (bitter) or *Kashaya* (astringent), the envenomation is likely very slight or nonexistent. For effective treatment, the patient must be conscious during administration. Following the use of the *leha*, no other medicine should be given immediately. To balance the potent nature of the medicine, the patient is traditionally advised to consume a curry made of matured ash gourd starting the following day.<sup>[9,10,11]</sup>

- ***Shara Pareeksha*** is a sophisticated prognostic method in *Keraleeya Visha Chikitsa* that relies on the observational assessment of the patient's breath movement, known as *Shara*, to predict the clinical outcome of an envenomation. This technique is rooted in the science of *Swarodaya* and involves *analyzing* which nostril is dominant the left (*Ida Nadi*) or the right (*Pingala Nadi*) at the specific time the patient is examined or the bite occurred. The practitioner correlates this breath dominance with the lunar calendar, the day of the week, and the time of the incident to determine the severity of the case. For instance, certain days are

considered naturally governed by the "Lunar" (cooling) or "Solar" (heating) breath; if the patient's breath movement is in harmony with these cosmic cycles, the prognosis is considered favourable (*Sadhya*). Conversely, if the *Shara* is found to be "obstructed" or moving in a pattern contrary to the established astrological and physiological norms for that moment, it serves as a warning of a grave prognosis (*Asadhya*). This method allows the *Vishavāidya* to assess the internal strength of the patient's *Prāna* (vital energy) and its ability to withstand the spreading venom, guiding the intensity and urgency of the subsequent therapeutic interventions.<sup>[12]</sup>

- ***Amritha Kala*** is a highly specialized prognostic and chronological concept in *Keraliya Visha Chikitsa* that correlates the severity of a venomous bite with the lunar cycle and the internal movement of vital energy, or "vital nectar" (*Amritha*), within the human body. According to this traditional theory, *Amritha* resides in specific anatomical locations that shift daily in accordance with the *Thithi* (lunar day). During the bright fortnight (*Shukla Paksha*), the *Amritha Kala* is believed to ascend from the toe to the head, while during the dark fortnight (*Krishna Paksha*), it descends from the head back to the toe. If a snake bite occurs at the exact anatomical site where the *Amritha* is currently stationed, the prognosis is considered extremely grave or even fatal (*Asadhya*), as the poison directly contaminates the body's most vital essence. Conversely, if the bite occurs at a location far from the current position of the *Amritha Kala*, the condition is deemed more manageable (*Sadhya*). Practitioners use complex mathematical calculations and lunar charts to determine the precise coordinate of this energy at the time of the incident, allowing them to predict the potential outcome with greater accuracy and adjust the intensity of the treatment accordingly. This system represents a unique integration of biological rhythms and cosmic cycles, serving as a critical guide for the *Vishavaidya* in prioritizing emergency care.<sup>[13,14,15]</sup>

## 5. Specialized toxicological protocols

- ***Kōzhi Chikitsa (Traditional Avian Medicine)***<sup>[16]</sup>

*Kozhi Chikitsa* (Chicken Therapy) is a distinctive emergency procedure in *Keraliya Visha Chikitsa* used primarily for localized detoxification and identifying the exact site of a bite when it is not clearly visible. The procedure involves placing the cloaca (anal opening) of a live chicken directly over the suspected bite wound. Due to the vacuum-like suction action of the bird's respiratory and excretory system, it is believed to "suck" out the surface-level venom. If the site is indeed a venomous bite, the chicken may exhibit signs of envenomation

or even die, at which point it is immediately replaced by another bird. This process continues until a chicken remains healthy and unaffected, signalling that the localized poison has been successfully extracted. Beyond its therapeutic role, it serves as a crucial diagnostic tool to confirm the presence of venom.

- ***Visha Kallu Prayoga (Application of the medicated Stone)***<sup>[17]</sup>

*Visha Kallu* (Poison Stone) is a specialized traditional application involving the use of medicated stones or beads that possess high absorbent properties. These stones are often prepared through elaborate processing with various Agada (anti-toxic) herbs. When applied to a fresh snake bite, the stone is said to adhere firmly to the wound, supposedly drawing out the venom through capillary action or medicinal absorption. It remains attached to the skin until it has "saturated" itself with the toxins, at which point it falls off naturally. Once the stone falls off, it is typically dropped into milk or medicated water; if the milk turns blue or dark, it is traditionally interpreted as a sign that the venom was successfully extracted. This procedure is a common folk-traditional practice used as a bridge between the bite incident and more intensive clinical management.

- ***Shudha Vela Prayoga (Application of the plant Vela)***<sup>[18]</sup>

The *Visha Vaidya Jyotsnika* identifies *Vela (Cleome gynandra)* as a cornerstone of traditional Kerala toxicology, specifically within the "*Sarva Maha Visha Chikitsa*" chapter. To maximize its therapeutic potential, the plant must be grown in a ritualized pit filled with *Strychnos nux-vomica* materials and harvested only after flowering, following strict protocols of mental and physical purification.

In emergency management, a highly effective preparation involves grinding the entire herb with Tulsi juice to create a pill administered in a quantity equivalent to an *Abrus precatorius* seed, which is believed to neutralize all toxins. For critical scenarios where venom causes systemic haemorrhaging through the pores, the plant is processed with buffalo dung juice or human urine to purify the blood. In advanced poisoning cases where the patient loses consciousness, the herb is used in Pradhamana Nasya (nasal powder administration) or processed into medicated wicks to arouse the senses through therapeutic smoke. Ultimately, this plant is regarded as a supreme panacea in *Visha Chikitsa*, though its most potent applications remain confidential and require the direct guidance of a *visha Vaidya*.

- ***Vellottu Prayoga in Mandali Visha***<sup>[19]</sup>

The *Vellottu Prayoga* is a therapeutic procedure specifically indicated when the venom particularly from a *Mahamandali* bite has localized in the *Amasaya* (stomach), a state known as *Stanamsraya*. Clinical markers for this stage include persistent headache, anorexia, and a marked increase in Vata Dosh. The procedure centres on the administration of Ikshvaku (*Lagenaria siceraria*), a potent Vamaka (emetic) drug categorized under the Phalini and *Urdhwabhagahara* groups. To enhance its efficacy and mitigate its harshness, the drug is processed in Goat's milk and administered using a *Vellottu Paathram* (Bronze vessel). The choice of bronze is deliberate; in traditional alchemy and pharmacology, the interaction between the Tikta Rasa (bitter taste) of the Ikshvaku and the metallic properties of the bronze vessel is believed to potentiate the drug's *Vishaghna* (anti-toxic) and *Vatapitta Shamaka* qualities. When combined with Patolaswarasa (juice of *Trichosanthes dioica*), this protocol facilitates the expulsion of the deep-seated toxins through controlled emesis, effectively clearing the *Amasaya* and relieving the systemic symptoms of envenomation.

## DISCUSSION

The relevance of *Keraleeya Visha Chikitsa* lies in its highly practical and specialized approach to emergency toxicology, which has significantly influenced the broader development of the field. By introducing alternative routes of administration, such as *Karu Prayoga*, the tradition addressed a critical gap in medical care the ability to deliver life-saving antidotes to unconscious patients who cannot swallow, effectively bypassing the digestive system for faster systemic effect. Furthermore, the emphasis on rapid action through procedures like *Oothu* and *Thooku Dhara* demonstrates an early understanding of the need for immediate localized and systemic stabilization to prevent the deep penetration of toxins into vital tissues (Dhatus). The tradition also enhanced diagnostic precision through tools like *Vishahari Lehya*, which allows for the identification of the offending species even in the absence of the snake itself, thereby guiding targeted treatment. Collectively, these practices have influenced the evolution of toxicology by integrating physiological observations with specialized delivery mechanisms, proving that traditional regional wisdom offers a sophisticated, systematic framework for managing acute envenomation that remains clinically relevant in modern integrative medicine.

## CONCLUSION

*Keraleeya Visha Chikitsa* stands as a testament to the profound clinical wisdom and specialized ingenuity of Kerala's traditional toxicologists. By seamlessly integrating cosmic rhythms with physiological observations, this tradition has developed a sophisticated array of "Special *Prayogas*" from the rapid stabilization of Oothu and the localized cooling of *Thooku Dhara* to the advanced parenteral delivery of Karu Prayoga. These methodologies do not merely represent historical relics; they offer a robust, systemic framework for emergency management that addresses the critical challenges of rapid envenomation, particularly in scenarios where modern medical facilities may be distant or oral administration is impossible. As we advance in the era of integrative medicine, the preservation and scientific validation of these unique practices are essential. By bridging the gap between traditional regional expertise and contemporary analytical standards, we can ensure that this invaluable heritage of Agada Tantra continues to offer life-saving potential and remains a vibrant, functional component of global toxicological science.

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