

## A CONCEPTUAL STUDY TO UNDERSTAND THE TWENTY - FOUR AYURVEDA TREATMENT MODALITIES IN THE TREATMENT OF POISON

Santosh Kumar<sup>1\*</sup> and Anoop Kumar<sup>2</sup>

<sup>1</sup>Assistant Professor, Dept. of Agad Tantra, Shiva Ayurvedic Medical College & Hospital  
PO. Chandpur, Bilaspur (HP).

<sup>2</sup>Associate Professor, Dept. of Rasashastra & Bhaishajya Kalpana, Shiva Ayurvedic Medical  
College & Hospital PO.Chandpur, Bilaspur (HP).

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### \*Corresponding Author

**Dr. Santosh Kumar**

Assistant Professor, Dept. of  
Agad Tantra, Shiva  
Ayurvedic Medical College  
& Hospital PO.Chandpur,  
Bilaspur (HP).

### ABSTRACT

Poison has been polluting human and non-human forms since antiquity. Our *Acharyas* had given a separate place for *Agadtantra* that deals with the management of animate and inanimate poisoning. Since ancient time *Agadtantra* was so popular and important that it was given an eminent place in *Astanga Ayurveda*. Therefore learning about treatment of poisoning is a good way towards service to the public health. *Acharya Charaka* has explained twenty-four modalities of treatment which are to be employed while treating poison cases according to the need. *Chaturvinshati upakramas* are unique in the management of poisons. It can be seen that most of them are based on same principle of modern medicine. *Chaturvinshathi upakramas* is

common for all types of *Visha* i.e., *Sthaavara*, *Jangama*, *Gara*, *Dooshi visha* etc. In most of the cases *Upakramas* should be selected by the physician on the basis of the type of *Visha Prakriti* (constitution), *Saatmya* (compatibility), *Ritu*(season), *Desha* (place), *Vega*(impulse) and *Balaabala* (strength and weakness of both the patient and poison). On detail study & after comparison, it was found that these 24 modalities of treatment are complete in terms of treatment of poisoning.

**KEYWORDS:** *Agada*, *Chaturvinshathi upakrama*, *Visha*, *Chikitsa*.

## INTRODUCTION

The name *Agada Tantra* is formed by combination of two words, *Agada* and *Tantra*. *Agada* means the medicine which removes the effect of poison and *Tantra* means the science. A substance which produces vitiation of *Dhaatu* (body tissue) can be called *Visha*. *Visha* causes concern to all living being by making the organism grievous ill and leading to death in certain cases. Ayurvedic classics have broadly classified the *Visha chikitsa* into two categories first one *Samanaya chikitsa* (general line of treatment) and *Visesha chikitsa* (specific measures of treatment). General line of treatment comprises principles and measures that could be adopted in all cases of poisoning irrespective of nature. The twenty four modalities of treatment applicable to animate (*jaangama*) and inanimate (*sthavara*) poison are described by Acharya Charaka. These treatment procedures are known as *Chathurvinshathi upakramas*. All the *upakramas* should be selected according to condition of patient and also *desha*, *ritu*, *prakriti*, *satva*, *satmya*, *bala*, *kala* of the patient.

*Charaka samhita* has explained *Chaturvimshati Upakrama* (Twenty four modalities) of treatment of poisoning which is also used in different *Visha vega* (poisoning impulses) and its treatment. So these twenty four modalities of treatment of poisoning described in *Charaka* can be used as unique immortal principles of Ayurveda. Acharya Charak and Acharya Vagbhat had specified that poison cannot damage tissue without entering into the blood stream. So the purpose of *Chaturvimshati Upakrama* was to restrict, disintegrate, neutralize and excrete the poison from the body. A general principle of treatment of poisoning is mentioned in *Brihatrayee* (Main Treatises of Ayurveda) like *Charaka*, *Sushruta* and *Vagbhat*. In *Charaka samhita* twenty four modalities of treatment of poisoning are explained which can be used as general principles of treatment of poisoning in *Sthavara* and *Jangama visha* (Inanimate and Animate poisons). In modern medicine general principles of treatment of poisoning is explained in different Toxicology textbooks. Twenty four modalities is the exclusive contribution of Acharya Charak in the field of *Agadtantra*.

## AIM AND OBJECTIVES

- To study general principles of treatment of poisoning in *Ayurveda* with special reference to *Chaturvimshati Upakrama* (Twenty four modalities) of *Charaka*.
- To study about *Chathurvinshathi Upakrama* indication and their mode of action

## MATERIAL AND METHODS

- All reference to *Chathurvinshathi Upakrama* is collected from *Charak Samhita*. All *Chathurvinshathi Upakrama* are discussed with their mode of action and their importance in *Visha* Management.

### *Chathurvinshathi upakrama*

So these twenty four modalities of treatment of poisoning described in *Charaka* can be used as unique immortal principles of *Ayurveda* and they are as follows:

1. *Mantras* (Recitation)
2. *Aristabandhan* (Tourniquet)
3. *Utkartana* (Excision)
4. *Nispidana* (Squeezing)
5. *Chushana* (Sucking)
6. *Agni* (Cauterization)
7. *Parisheka* (Sprinkling of medicated water)
8. *Avgaha* (Bath with medicated water)
9. *Raktamokshana* (Blood-letting)
10. *Vaman* (Emesis/Gastric lavage)
11. *Virechana* (Gastric irrigation/Purgation)
12. *Updhana* (Application of medicine after making an incision over the scalp)
13. *Hrdyavarana* (Cardio-protective drugs)
14. *Anjana* (Application of collyrium)
15. *Nasya* (Inhalation of medicated oil etc.)
16. *Dhuma* (Smoking therapy)
17. *Leha* (drugs in the form of linctus given for licking)
18. *Aushada* (Administration of anti-toxic drugs)
19. *Prashamana* (Suppressive drug & procedure)
20. *Pratisarna* (Application of dry powder)
21. *Prativisha* (Administration of poison medicine/Antidote)
22. *Sangya-samsthapana* (Administration of medicine for restoration of consciousness)
23. *Lepa* (Administration of medicine in form of paste)
24. *Mtrutasanjivana* (Measures for the revival of an apparently dead person)

## 1. *Mantra*

*Mantra* is a word of combination of sacred words recited in a rhythmic and prescribed manner through which one gets the immortal power. *Mantras* are said to eliminate poison from the body quicker than medicines. *Mantra chikitsa* should be practiced by an individual who abstains from women, meat & wine. A person should take little food, maintain hygiene of the body & should sleep on a mattress made with *kusha* grass. By use of *Mantra* with *Arishtabandhana* spread of poison is blocked and patient life is saved. *Mantra chikitsa* is the most effective treatment in *Jangama visha* (Animate poison) specially in snake bites.

**Probable mode of action:** In case of any accidental poisoning or bite of a poisonous insect, reptile etc. the body's fight-flight response is activated, which in case increases the release of adrenalin and some other hormones/neurotransmitters which cause trigger in circulation and panic attacks. But use of mantras is thought to decrease this panic attack and hence the spread of poison is delayed for a period of time. Hence the physician can side by side continue the line of management as per requirement.

## 1. *Arishta bandhana*

*Arishta* means unfavourable or which gives the indication of death. When the poison enters the circulation, it spreads to all the remote areas of the body combining with blood. The poison invades all the systems and organs, resulting in fatal consequences. To prevent this, the physician has to make every attempt to arrest the spread of poison which can be achieved from ligature / *bandhana*.

### Types

#### 1. *Arishta with mantra*

#### 2. *Arishta with rajju (rope)*

*Bandhana* should be done 4 *angula* (4 inches) above the bite site. Cloth, rope, thread, fiber and any soft material can be used for the *bandhana*. *Acharya Vagbhata* has mentioned that the *bandhana* should be tied in such a way, that is neither too tight nor too loose. In modern medicine this procedure is similar to application of a tourniquet.

**Probable mode of action:** The *bandhana* should prevent the poison from entering the circulation. It prevents spreading of the poison. These efforts can be made to slow down the lymphatic & venous drainage & not to obstruct the arterial supply as a result of this spreading of poison to all over the body is stopped.

## 2. *Utkartana*

In this method small incision is taken at the site of bite avoiding *Marmas* (vital points). A small incision is given at the sight of the bite to allow blood to ooze out with, which the poison is also driven out of the body and prevented from getting absorbed into the system. It is carried out in cases of poisoning to prevent the poison from spreading.

**Probable mode of action:** Spreading of *Visha* can be stopped with the destruction of root cause.

## 3. *Nishpeedana*

It is the method of expelling the poison by squeezing the area of bite. In this procedure, the site of the bite is gently squeezed to eliminate poison with secretion of blood. It is contraindicated in *Marma* (vital parts) and *Sandhi* (joints). In modern medicine this procedure is similar to pressure embolism. It is adopted in condition where incision is not advisable.

**Probable mode of action:** This procedure eliminates the poison.

## 4. *Chushana*

Sucking of blood through the mouth is known as *Chushana*. It is the method of sucking the poison from the site of bite. It is contraindicated if the physician is suffering from *mukha vrana* (Mouth ulcer). In this process, the physician fills the mouth with mud, ash, medicinal recipes, cow dung. As the incision is made below the ligature and the physician suck the poison along with blood and spit it out. Now a days this procedure is carried out with the syringes or suction apparatus. It is mainly done on the fleshy part (*Mansala* region).

**Probable Mode of action-** Through these method the poison which is spread nearby the site of bite, gets removed along with the blood & further the poison does not get spread in the body.

## 5. *Agnikarma*

In this method the site of the bite is cauterized with the help of heated rods of gold, iron etc. It is contraindicated in the bite of *mandali sarpa visha* and predominance of *pitta*. This procedure is indicated in *Twaka-mansagata visha* (Poison in skin & muscles), and also indicated when the bite is on the body part where, *Aristhabandhna* cannot be done.

**Probable mode of action:** This procedure destroys some tissues in an attempt to mitigate damage, remove an undesired growth or minimize infection.

## 6. *Parisheka*

It is the method of continuous sprinkling medicated decoction over the site of bite. Decoction prepared by cooling agents like *Chandana* and *Usheera* are used for *parisheka*. Acharya Sushruta has described *Parisheka* after *Raktamokshana* in poisonous condition.

**Probable mode of action:** The cold character of drug helps in reduction of further infection in the wound by the contraction of blood vessels and prevents further spread of poison.

## 7. *Avagahana*

*Avagahana* means immersion or dipping of the affected part or whole body in a medicated decoction. In modern science, it is known as immersion Bath. *Avagahana* is done in the presence of severe pain.

**Probable mode of action:** This procedure neutralizes the effect of poison. They help in proper blood circulation & eliminate toxic matter from the body. The speed of absorption can be reduced by this procedure.

## 8. *Raktamokshana*

Blood is the major media through which the poison spread. It blows up the poison in the body just as air blows up the fire. It should be performed by puncturing the vein scraping, application of horn, *alabu*, leech or venesection. Blood-letting is contraindicated in pregnancy, children, old age person & painful condition. If the blood which is coming out is normal, then the bloodletting should be stopped. If poison is not removed from blood, it spread throughout body and causes death. *Raktamokshana* should be done immediately in case where poisoned area becomes discoloured, rigid, swollen. *Raktamokshana* is beneficial in condition where the poison has spread to distant parts of the body.

**Probable mode of action:** *Raktamokshana* is one of the important procedures to control the intensity of the poison.

## 9. *Vamana*

It is the method of inducing vomiting. This treatment is useful in the conditions of ingested poison, particularly when the poison is in the stomach. In modern science it is known as

emesis which is useful for removing an ingested unabsorbed poison. It is indicated in *Kaphaja* bites, associated with excessive salivation. According To *Sangraha*, *Vamana* should be done, if snake bite is above the umbilical region.

In *Sthavara visha* – 1st, 2nd vega

In *Dooshivisha* – for *Shodhana*

In *Darveekara visha* – 4th vega

In *Mandali & Rajimana visha* – 2nd, 4th vega

In *Gara visha* - for *Shodhana*.

**Probable mode of action:** This procedure is useful for removing an ingested unabsorbed poison.

### 10. *Virechana*

During the second phase of poisoning where the poison is in the *pakwasaya*. *Virechana* is carried out which means expulsion of ingested poison from intestines through anal route. In modern science it compares with whole bowel irrigation therapy (WBI). WBI may be advantageous for patients who have ingested toxic material. This procedure is indicated when the patient develops symptoms like distension of abdomen, burning sensation, retention of urine, stool flatus. *Vaghabhata* describes that *Virechana* required in person of *Pitta* constitution, bitten by snake of *pitta* predominant features, having bite below umbilicus & if *pitta* is localized in the *pakwashaya*.

In *Sthavara visha* – 2nd vega

In *Darveekara visha* – 5th & 6th vega

In *Mandali visha* – 3rd & 5th vega

In *Rajimana visha*- 3rd vega.

**Probable mode of action:** It cleanses the body toxins through eliminating them downwards.

### 11. *Updhana karma*

If the poison blocks the channel of circulation for *vata* through *kapha* then this therapy is quite handy as per *Acharya Sushruta*. He indicated an incision of a shape resembling that of a paw of a crow and flesh of goat, cow, buffalo etc is to be kept on it. *Acharya Vaghabhat* states that if the snake bites in the upper region then this incision should be made in lower limbs and vice versa.



**Probable mode of action:** It is a process to eliminate poison from the body. By giving incision over the head the blood is drawn out, which in turn decreases the oedema formed due to the poison over that region. Further this bloodletting is enhanced by the capillary action produced by placing flesh of cow, goat etc.

## 12. *Hridayavarana*

*Hridayavarana* is the method of protection of *hridaya* by using certain medicines. The patient is made to drink more *ghee* with *madhu* or with anti-poisonous drugs. In modern science cardio-protective drugs are given. *Teekshnata* of *visha* causes the *karshana* of *hridaya*. So, for the protection of heart, *Hridayavarana* is to be done.

**Probable mode of action:** After poisoning, immediately administration of *ghee*, slow down the spread of poison so more time is available for the treatment.

## 13. *Anjana*

Acharya Shusruta has indicated *Anjana*. It is application of medicated paste in the inner part of eyelids. *Anjana* drugs: *Pippali*, *maricha*, *yavakshara*, *vacha*, *saindhava* & *shigru*, macerated with the bile of *rohitaka* fish. When the *Doshas* are located in *netra*. It should be applied in a case of poisoning, when the patient is unconscious, develops swelling around the eyeball, discolouration, turbidity, blurred vision and discoloured appearance of all the objects.

**Probable mode of action:** It helps the patient to regain consciousness and it protects the eye damage. Collyrium destroys the poisons and cleanses the eye, relieves irritation by removing loose foreign material, air pollutants.

## 14. *Nasya*

It is the instillation of medicine in the nose. If poison has spread up to the head, *nasya* is said to be the main line of treatment. Nasal medications are given in the form of liquids or fine powders. According to Charaka, if there is obstruction in nose, eyes, ear, tongue, throat, *nasya* should be done with the juice of root of *bandhujiva*, *bharangi* & *tulsi* blow in to the nose. *Nasya* is indicated in loss of consciousness and when the poison is located in the head.

**Probable mode of action:** This procedure restores the consciousness.



**15. Dhoopana**

The process of *Dhumana* implies two meanings. The Fumigation of the wound and inhalation of medicated smoke. The patient is made to inhale the medicated fumes through nostril. *Acharya Shusruta* has told that *dhupana* will be more advantageous in condition where *swedana* is contraindicated, ex. *Vrischika visha*.

**Probable mode of action:** Anti toxic material that emitted from smoke enters the body and clear channels of circulation and nullifies the toxic effect of poison.

**16. Leha**

*Leha* means linctus. This is a semi solid medicinal preparation. In poisoning, the throat and mouth gets dried because of *ushna*, *ruksha* qualities of *visha*. In such condition immediate medication should be administered to avoid adverse effect of poison. So *lehya* (linctus) are preferred as *Anupana* and for this purpose *madhu* and *ghee* are used separately or in mixed form with medicine as *Anupana*. It is useful when prolonged treatment is required and also for children.

**Probable mode of action:** This procedure is useful in pacify the adverse effect of poison.

**17. Aushadha**

This is a rational therapy, depending on the nature of poison & patient condition, medicine of different forms & combinations are used. In Ayurveda different types of *Agada's* are mentioned in different types of poisoning. Different medicinal preparations are used to treat the symptoms and complications manifested due to the poisoning.

**Special agadas are as follows**

*Mahaagada*

*Rishabhagada*

*Tarkshya agada*

*Ajitagada*

*Vilwadi agada* etc.

**Probable mode of action:** *Agada's* are acts like antidote of all kind of toxicity. It can counteract the effect of poison.

### 18. *Prashamna*

Complications like *Mada*, *Murcha*, *Vishada*, *Hridrava* are relieved by cold procedure like blowing of air with the help of fan until poisonous person doesn't show straightening of body hairs. *Kshiri* plant like *Vat* is used to stop excess bloodletting. *Hinga* & *Pippali churna* is given with honey & sugar or *Kapithaswaras* & *Lavana* is given with honey & sugar to stop complications like *jwar*, *hikka*, *shwas*, *kasa* etc

### 19. *Pratisarana*

*Pratisarana* means local instillation of drugs. In poisoning during the process of *Raktamokshana*, if the blood doesn't come out, certain medicated powders like *Sunthi*, *Maricha*, *Pippalli*, *Grahadhuma*, *Haridra*, *Panchlavana*, *Brihati*, *Kantkari* are placed on the wound. During the process of *Raktamokshana*, if the blood doesn't come out.

**Probable mode of action:** This procedure promotes the blood flow.

### 20. *Prativisha*

When the spread of poison becomes uncontrollable by *Mantra* & other procedures, then this is the last measure in the treatment of poison. Proper selection of *Prativisha* is very important and all the precautions are to be taken while administering them. The patient should be administered antidote only after taking *ghee*. It is taken after sun rise in winter and spring. In summer, it is only administered in emergencies. This treatment procedure is almost similar to the modern day concept of physiological antidotes. It is also indicated, if the *Visha vega* in between 5th and 7th *vega*.

**Contraindication:** It should not be administered during cloudy day or rainy season. It should not be administered to patients who are angry, suffering from hunger, thirst, diseases of *pitta*, pregnant women, children, old age.

*Sthavara visha* is similar to *kaphaja guna*, so the direction of *visha* is upward. *Jangama visha* is similar to *pittaja guna*, so the direction of *visha* is downward. The *guna* of *Sthavara* and *Jangama visha* are opposite to each other. Hence, the patient bitten by snake is treated with poisonous roots and the person who has consumed vegetable poison should be got bitten by snakes.

Dose- Snake bite – 4,6,8, *yava* as minimum, moderate and maximum dose

Insect bite- 2 *yava*

Scorpion bite- 1 *tila*.

### 21. *Sangyasthapana*

If the patient is unconscious, the physician has to take all the steps to revive the patient from that condition. If symptoms like un-consciousness, upturned eyes balls and dropping of neck, vein-section should be carried out in the veins of forehead or extremities. If the desire blood does not come out, incision should be made superficially on the scalp of the patient. According to Acharya Charka in 6th *visha vega*, *sangyasthapana chikitsa* is to be done.

**Probabale mode of action:** This procedure restores the consciousness.

### 22. *Lepa*

It is an external application of the medicated paste over the affected parts. The poison which comes in contact with skin may produce ill effects which may cause narcosis, fainting, palpitation, these should be controlled by the application of cold paste. *Lepa* is used when the poison comes in contact with skin.

**Probabale mode of action:** This procedure pacify the poison just as water pacify the fire.

### 23. *Mritasanjivani*

It is one of the ancient classical therapies through which life of an individual is restore or regained. Just as *Amrita* gives life even to the dead person, in the same way *Mritasanjivani* can be used in all cases of *Visha*. Acharya Charaka explains a formulation named as *Mritasanjivani Agada*, which is in the form of *gutika*. This cures all types of *Visha*. This *Agada* is used for resuscitation, when the patient is apparently dead, but life energy remains hidden in the body. But, now a day this therapy has vanished. In modern science, this therapy could be compared with the usage of broad spectrum drugs or ventilator support. When the patient condition becomes worse and all the vital activities are diminished.

**Probabale mode of action:** This procedure can nullify the effect of poison.

## DISCUSSION

*Ayurveda* has its own way and principles for the management of *Visha* (Poison). This procedures are depends upon the stages of poisoning. After analyzing this with Modern principle of poisoning, it is found that these are based on same principle as that of modern, so we can classify this under the following heading of modern principle.

To check entry of poison in blood	Eliminative therapy	Symptomatic therapy	Counteracting measures	Pacifying measures
<i>Aristha Bandhana</i>	<i>Vamana</i>	<i>Hridayavarana</i>	<i>Mantra</i>	<i>Lepa</i>
<i>Utkartana</i>	<i>Virechna</i>	<i>Sangyashtapana</i>	<i>Aushada</i>	<i>Pratisarana</i>
<i>Nishpeedana</i>	<i>Nasya</i>	<i>Mritasanjivana</i>	<i>Prativisha</i>	<i>Anjana</i>
<i>Chushana</i>	<i>Raktmokshna</i>			<i>Prashamana</i>
<i>Agni</i>				<i>Dhooma</i>
<i>Parisheka</i>				<i>Lepa</i>
<i>Avagahana</i>				<i>Upadhana</i>

After reviewing this, out of these 24 procedures, 7 procedures are restricts the entry of the poison in to the systemic circulation, 4 procedures are for the removal of the Poison, 3 procedure are for the symptomatic treatment, 3 procedures are for the counteracting the effect of poison and 7 procedures are for the pacifying the symptoms of the poison.

After comparison of both Ayurveda and Modern medicine with respect to their basic principles of treatment of poisoning, we find that all these principles which are suggested by Modern medicine are already described in *Ayurvedic Samhitas* by *Acharyas* before thousands of year. Unfortunately, due to lack of scientific validation in this concept, so now a day this therapy has been vanished. Hence evidence based research is highly needed for acceptance of Ayurveda. The purpose of *Chaturvimshati upakramas* was to restrict, pacify, neutralize and excrete the poison from the body and for saving the life. All the *upakramas* should be selected according to condition of patient and also *desha, ritu, prakriti, satva, satmya, bala, kala* of the patient. One who gets skill over this line of treatment then it will be boon for *Ayurveda*.

## CONCLUSION

From this article it is clear that in the present scenario these *chaturvimshati upkrama* are most important as they were before in combating the cases of poisoning. *Chaturvimshathi Upakrama* is common for all types of *visha* i.e., *Sthaavara, Jangama, Gara, Dooshi visha* etc. In most of the cases *Upakramas* should be selected by the physician on the basis of the type of *visha, Prakruti, Saatmya, Ritu, Sthaana, Vega and Balaabala*. As these modalities are based on scientific approach, its study in detail with in scientific parameters can be done to have a standard protocol in the management of poisons. There might be some data available, that opposes their methods but still there is no other line of management that could challenge these techniques. Also it is our sole duty to incorporate *Ayurvedic* medicines for modification

and addition to the previous knowledge and to come at par with the need of this present modern time. Through this article we wish not to claim but to advance in the field of *Ayurveda*.

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