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Role of *Chaturvinshati Upakramas* in the Management of Poisoning: A Review

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ABSTRACT

Agada tantra is the branch of *Ashtanga Ayurveda*, which was developed in ancient time. *Agada tantra* is the system of knowledge for conquering poisons. In ancient times most of the poisoning was from poisonous snake bites. 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 Prakruti* (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.

Key Words: *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 cases¹. 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)². 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 *Chaturvinshathi upakramas*³. All the *upakramas* should be selected according to condition of patient and also *desha, ritu, prakriti, satva, satmya, bala, kala* of the patient⁴.

AIMS & OBJECTIVES

To study about *Chaturvinshathi upakrama*, there indication and mode of action.



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Table 1⁵ The twenty four specific treatments of poison (*visha*) are as follows:

S.no.	Treatment Measure	Probable Translation
1	<i>Mantra</i>	Incantations / Chanting of hymns
2	<i>Aristabandhana</i>	Ligation / Binding
3	<i>Utkartana</i>	Incision
4	<i>Nishpeedana</i>	Compression / Application of pressure
5	<i>Chushana</i>	Sucking
6	<i>Agni</i>	Cauterization
7	<i>Parisheka</i>	Irrigation / Sprinkling
8	<i>Avagahana</i>	Immersion bath
9	<i>Rakta-mokshana</i>	Blood letting
10	<i>Vamana</i>	Emesis
11	<i>Virechana</i>	Purgation
12	<i>Upadhana</i>	Application on the incised scalp
13	<i>Hridayavarana</i>	Protection of heart
14	<i>Anjana</i>	Collyrium
15	<i>Nasya</i>	Nasal medication / Snuffing
16	<i>Dhoopana</i>	Medicated fumigation
17	<i>Leha</i>	Linctus
18	<i>Aushada</i>	Medicine
19	<i>Pradhamana</i>	Blowing
20	<i>Pratisarana</i>	Local application
21	<i>Prativisha</i>	Antidote
22	<i>Lepa</i>	Ointment / Paste
23	<i>Sangyasthapana</i>	Resuscitation
24	<i>Mirtasanjivana</i>	Revival

Mantra (Incantations)^{6,7} - *Mantra* is a word of combination of sacred words recited in a rhythmic and prescribed manner through which own get the immortal power. *Mantras* are said to eliminate poison from body quicker than medicines. *Mantra chikitsa* should be practiced by individual who abstaining from women, meat & wine. Person

should take little food, maintain hygiene of body & should sleep on mattress made with *kusha* grass. By use of *Mantra* with *Arishtabandhana* spread of poison is blocked and patient life is saved.

Indication- *Mantra chikitsa* is most effective treatment in *Jangama visha* (animate poison) specially in snake bites.

Mode of action- It awakens the body's natural healing mechanisms, with the help of that healing power or positive energy in person is stimulated. Due to this, poison is eliminating from the system quicker than medicine.

Arishta bandhana (Binding or Ligature)^{6,7,8-} *Arishta* means unfavourable or which gives the indication of death. When the poison enters in the circulation, spread 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 achieve from ligation / *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 way, that is neither too tight not too loose. In modern medicine this procedure is similar to application of tourniquet.

Indication- When the intensity of poison increases it signifies the *Arishta*.



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

Utkartana (Incision)⁹ - 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.

Indication- It is carried out in cases of poisoning to prevent the poison from spreading.

Mode of action- Spreading of *Visha* can be stopped with the destruction of root cause.

Nishpeedana (Compression)^{6,10} - 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.

Indication- It is adopted in condition where incision is not advisable.

Mode of action- This procedure eliminates the poison.

Chushana (Sucking)¹⁰ - 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 dug. 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.

Indication- It is mainly done on the fleshy part (*mansala* region).

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.

Agnikarma (Cauterization)^{6,10}- 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*.

Indication- This procedure is indicated in *Twakamansagata visha* (Poison in skin & muscles), and also indicated when the bite is on the body part where, *Aristhabandhna* cannot be done.

Mode of action- This procedure destroys some tissues in an attempt to mitigate damage, remove an undesired growth or minimize infection.

Parisheka (Sprinkling)^{6,11} - 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*.

Indication - Acharya Sushruta has described *Parisheka* after *Raktamokshana* in poisonous condition.

Mode of action-The cold character of drug helps in reduction of further infection in the wound by



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the contraction of blood vessels and prevents further spread of poison.

Avagahana (Immersion bath)¹²- *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.

Indication- *Avagahana* is done in the presence of severe pain.

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.

Raktamokshana (Bloodletting)^{4,6} - 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.

Indication- *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.

Mode of action- *Raktamokshana* is one of the important procedure to control the intensity of the poison.

Vamana (Emesis)^{6,13,14}. 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.

Indication- It is indicated in *Kaphaja* bites, associated with excessive salivation. According To *Sangraha-kara*, *Vamana* should be done, if snake bite is above the umbilical region.

¹⁵In *Sthavara visha* – 1st, 2nd *vega*

In *Dooshivisha* – for *Shodhana*

¹⁶In *Darveekara visha* – 4th *vega*

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

¹⁷In *Gara visha* - for *Shodhana*.

Mode of action- This procedure is useful for removing an ingested unabsorbed poison.

Virechana (Purgation)^{6,13,18} - 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 bowl irrigation therapy (WBI). WBI may be advantageous for patients who have ingested toxic material.

Indication- 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*.

¹⁵In *Sthavara visha* – 2nd *vega*

¹⁶In *Darveekara visha* – 5th & 6th *vega*

In *Mandali visha* – 3rd & 5th *vega*



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In *Rajimana visha- 3rd vega*.

Mode of action - It cleanses the body toxins through eliminating them downwards.

Upadhana (Medication on incised scalp)^{18,19} - *Upadhana* is a special procedure in which medicine is applied over the incised scalp. During this stage incision should be made on scalp of patient resembling crow's leg and paste of *Charmaksha* or meat of goat, cow, buffalo or cock with blood in one *bilva* quantity should be applied on incised area. According to Vaghabhata, if the snake bite is in lower part of the body incision is to be made on Scalp. Similarly if it is in the upper parts then incision is to be made in the feet.

Indication- It is an emergency treatment given to the patient who is suffering from fully manifested symptoms of poisoning. This treatment is indicated in both ingested poison and animal bites.

Mode of action- This procedure absorb the poison immediately so patient becomes conscious.

Hridayavarana (Protection of heart)²⁰- *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.

Indication- *Teekshnata* of *visha* causes the *karshana* of *hridaya*. So, for the protection of heart, *Hridayaavarana* is to be done.

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

Anjana (Collyrium)^{13,18}- 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.

Indication- 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.

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.

Nasya (Nasal instillation)^{18,21}- 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.

Indication – *Nasya* is indicated in loss of consciousness and when the poison is located in the head.

Mode of action – This procedure restores the consciousness.

Dhoopana (Fumigation)²² -The process of *Dhumana* implies two meanings. The Fumigation of the wound and inhalation of medicated smoke.



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The patient is made to inhale the medicated fumes through nostril.

Indication- Acharya Shusruta has told that *dhupana* will be more advantageous in condition where *swedana* is contraindicated, ex. *Vrischika visha*.

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.

Lehya (Linctus)²³ -*Lehya* 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*.

Indication – It is useful when prolonged treatment is required and also for children.

Mode of action- This procedure is useful in pacify the adverse effect of poison.

Aushadha (Medicine)²⁴- 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.

Indication- 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.

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

Pradhamana (Blowing)²⁵- Blowing up of medicated powders into the nose is called as *Pradhamana*. After the incision is made on the scalp, the powder of *latabhi*, *katuka*, and *katphala* are blown into the nostril of the patient.

Indication-When any obstructions in body channels.

Mode of action - When the medicated powder is blown into the nose, it gets spread through the respiratory passage into the body by which the spreading of poison is reduced.

Pratisarana (Rubbing)⁶- *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.

Indication- During the process of *Raktamokshana*, if the blood doesn't come out.

Mode of action- This procedure promotes the blood flow.

Prativisha (Antidote)²⁶- 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



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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.

Indication- 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*.

Sangyasthapana (Regaining the consciousness)²⁷ - If the patient is unconscious, the physician has to take all the steps to revive the patient from that condition. If symptoms like unconsciousness, upturned eyes balls and dropping of neck, *vene-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.

Indication⁶ - According to Acharya Charaka in 6th *visha vega*, *sangyasthapana chikitsa* is to be done.

Mode of action- This procedure restores the consciousness.

Lepa (Paste)⁶ - 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.

Indication- when the poison comes in contact with skin.

Mode of action - This procedure pacify the poison just as water pacify the fire.

Mritasanjivani (Resuscitation)²⁵ - 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.

Indication- When the patient condition becomes worse and all the vital activities are diminished.

Mode of action- This procedure can nullify the effect of poison.

DISCUSSION



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Ayurveda has its own way and principles for the management of *Visha* (Poison). This procedure 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.

Table 2: Classification of 24 *upakramas* on the basis of modern principle:

To check entry of poison in blood	Eliminative therapy	Symptomatic therapy	Counteracting measures	Pacifying measures
<i>Arishtha bandhanana</i>	<i>Vamana</i>	<i>Hridayavarana</i>	<i>Mantra</i>	<i>Lepa</i>
<i>Utkartana</i>	<i>Virechana</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>Raktamokshana</i>			<i>Pradhamana</i>
<i>Agni</i>				<i>Dhooma</i>
<i>Parisheka</i>				<i>Leha</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.

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

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,



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