

A REVIEW ON AYURVEDIC MANAGEMENT ON VENOMOUS SNAKE BITE

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ABSTRACT

Snake-bites are well-known medical emergencies in many parts of the world, especially in rural areas. Agricultural workers and children are the most affected. In India, snake bites take a heavy toll of human lives. India is reported to have the highest number of snake bites (81,000) and deaths (11,000) per year. Estimates of death due to snake bite range widely from 1,300-50,000; hence there is a utmost need for the attention on snake bite treatment. The current annual need for the treatment of snake-bite envenoming amounts to 10 million vials of antivenins. Unfortunately, the present worldwide production capacity is well below these needs and frequently leads to side effects. In view of limited presence of modern medical avenues in far flung areas, such are source needs to be harnessed, as herbals are cheap, acceptable and often at the disposal of victims. *Ayurveda* has its own way of approach in the management of snake bite poison, which has co-parlance with the concepts of current science. In the present article, an attempt is made to highlight the importance of classical remedial measures and special emphasis which helps in the management of snake bite poison.

Keywords: Snakebite, *Ayurveda*, *Sarpa Visha*, *Visha Chikitsa*

INTRODUCTION

There are nearly 3150 species of snakes in the world and around 600 species are venomous¹. In India, out of the 216 species of snakes, 60 are considered poisonous². Snakes are found on every continent except Antarctica. The true global burden of snake bite is not known due to lack of standardized reporting and underreporting. It is documented that there are 54, 00,000 snake bites with 2, 50,000 envenomations and around 1,25,000 fatalities annually in the world. Most snake bites and fatalities occur in Asia, Southeast, and sub-Saharan Africa, with India reporting the highest mortality due to

snake bites. India is reported to have the highest number of snake bites (81,000) and deaths (11,000) per year³. Estimates of death due to snake bite range widely from 1,300-50,000. According to Government of India data, there were 61,507 snake bites with mortality of 1124 in 2006; 76,948 bites and 1359 deaths in 2007. A high mortality of 50,000 deaths each year has also been published⁴. Majority deaths are caused by cobra, krait and vipers

Fatality due to snake bite is due to wide species variation, shortage of anti-snake venom (ASV), poor compliance with treatment pro-

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protocols, lack of public education and clear policy to deal with the problem. The reason being lack of experience in handling such cases and non-compliance with the existing guidelines. Snake bite is a common medical emergency, where timely treatment can reduce morbidity and mortality and save precious human lives. Though National Protocol on Snake Bite Management formulated by the Ministry of Health & Family Welfare, Government of India is in place besides the WHO Guidelines⁵. The modern health care facilities are not well equipped and there is shortage of ASV, emergency drugs, ventilators etc thus necessitating a trip to well-equipped tertiary care hospitals, where treatment may be unaffordable due to limited purchasing power of the rural victims. Thus, increasing the high mortality rate and loss of crucial golden lives of humans.

Types of Sarpa Damsha:

According to *Sushruta*⁶

1. *Sarpita*-deep punctured
2. *Radita*-superficial punctured with less venom injected
3. *Nirvisha*-non poisonous

According to *Vagbhata*⁷

1. *Tundahata*-stained by Saliva
2. *Vyalidha*-one or two bite marks & no bleeding
3. *Vyalupta*-one or two bite marks & bleeding
4. *Dashtaka*-three marks accompanied with tearing of muscles
5. *Dashtanipidita*-four biting marks

Causes for Snakebite: *Acharyas* have explained 8 reasons for *Sarpa Damsha*. They are *Bhaya*, *Krodha*, *Aaharartha*, *Pada sparsha*, *Ati vishat*, *Vairadhya*, *Papa karma*, *Deva-rishi-yama kopa*⁸.

Lakshana's^{9, 10}:

Darvikara Sarpa: *Shyavata Of Mukha*, *Netra*, *Nakha*, *Mutra*, *Purisha* And *Tvak*, *Shiro Gourava*, *Sheeta Jwara*, *Nidra Nasha*, *Vijrimba*, *Sandigdhatva Of Vak (Irrelevant Speech)*, *Acheshta*, *Lala Srava* And *Phenagama*, *Kantha Gurugurayana (Rumbling Sound)*, *Shushka Udgara* And *Other Lakshna Of Vata*

Mandali Sarpa: *Saushma*, *Shosha*, *Peeta lohita*, *Pruthu*, *visarpita*, *daha*, *ushna*, *kleda*, *kotha*, *vishiryatey*, *Peeta tha of mukha*, *danta etc*, *Trishna*, *Shrama*, *Bhrama Daha*, *Murcha*, *Jwara – tik-taasyata*, *Urdwa & Adho marga raktha agama*, *Sheeta icha*, *Dhumako*, *Mada*, *Other Lakshna of Pitta*.

Rajimantha Sarpa: Bite site – *Snigdha*, *Sthira*, *Pichila*, *Shopha*, *Raktha- Sandra*, *Shita & Pandu*, *Shirovyatha*, *Aru-chi*, *Chardhi*, *Aalasya*, *Hrrillasa*, *Madhurasyata Kantey Ghuru-Ghuru*, *Kruchra- Uchvasa & Nishvasa*, *Nidra*, *Kasa*, *Panduta Of Nakha Etc*, *Anga Guruta* And *Stamba*, *Srava From Nasa*, *Akshi*, *Mukha*, *Romaharsha*, *Shwasa*, *Tama*, *Other Lakshna Of Kapha*

Diagnosis:

Vishahari Lehya¹¹:

This *Lehya* is very useful in diagnosing venomous and non-venomous snake bites. 250gms of seeds of *Luffa amara* ground in the juice of about 500 betel leaves should be tied in a cloth and hung on a hook. The juice flowing down is collected and an equal quantity of old neem oil is to be added. One-fifth quantity (by weight) each of purified mercury and purified sulphur is added to it, mixed in a mortar and water is removed by evaporation and kept in a glass jar. 50-

100mg of *Lehya* spread on a betel leaf is given to the victim.

If the victim tastes *Amla Rasa* then it is to be bitten by *Mandali Sarpa*. Similarly, *Katu Rasa* by *Daarvikara Sarpa*, *Madhura Rasa* by *Rajimantha Sarpa* and *Kashaya Rasa* then there is Slight envenomation .

Caution- This preparation itself is toxic. If it was given, ripe fruit of *Benincasa Hispida* is to be used for the next 3-4 days.

Chikitsa:

Snake bite can be treated on the basis of 3 treatment modalities like

1. *Satwavajaya*-Reassuring of the victim who may be very anxious
2. *Daivavyapashraya*-Chanting *Mantra*
3. *Yukthivyapashraya*-Medication

Acharya Charaka has mentioned “*Chaturvimshati Upakramas*” (24 treatment modalities) in all cases of poisonings. Based on the probable purpose of the treatment, these *Upakramas* can be applied.

Table2 Chaturvimshati Upakramas¹²

check entry of poison in blood	Eliminative therapy	Symptomatic therapy	Counteracting measures	Pacifying measures
<i>ArishtaBandhana</i>	<i>RaktaMokshan</i>	<i>Hrudayavaranam</i>	<i>Mantra</i>	<i>Anjana</i>
<i>Utkartanam</i>	<i>Vamana</i>	<i>SajnaSamsthapan</i>	<i>Aushadha</i>	<i>Lepa</i>
<i>Nishpeedanam</i>	<i>Virechan</i>	<i>MrutaSanjeevan</i>	<i>Prativisha</i>	<i>Dhuma</i>
<i>Cushanam</i>	<i>Nasyam</i>			<i>Leham</i>
<i>Agni</i>				<i>Upadhanam</i>
<i>Parishekam</i>				<i>Pradhamanam</i>
<i>Avagaham</i>				<i>Pratisaranam</i>

Mantra: *Chakrapani* prefers *Mantra* as foremost and par excellence *Upakrama* among others, which nullifies the poison¹³. *Charaka* further say that, chanting *Mantra* is a specific rhythm builds confidence in victim and helps in relieving anxiety. They stimulate sympathetic nervous system .Strengthen the peripheral blood vessels, which helps in maintaining the normal blood flow to the vital organs and it awakens the body's natural healing mechanisms¹⁴ .

Arishta Bhandana(Ligature): *Arishta* means unfavorable/indication of death. *Bandhana* means to stop. When the intensity of the poison increases, it starts to combine with the blood and gets spreaded all over the body. Thus to prevent or stop the spreading

of poison, the physician has to opt the *bandhana*.

Material: *Plota*(cloth),*Charmanta* ,*Mrudu Valka* or any soft material. It should be tied 4 *Anguli* above the site of bite. Neither too tight nor too loose

Utkartanam(Incision): Poison does not advance after incision of bite like a tree after cutting its root i.e. spreading of poison can be stopped.

Achushana(Sucking):The physician should suck the poison filling his mouth before with *Mruth*,*Bhasma*, *Agada Or Gomaya* .This method should be adopted especially on fleshy part

Nishpeedanam(Compression):Expelling of the poison by squeezing the area of bite where the incision is not advisable. It is just like destroying of the seed before sprouting. It should not be done if bite is on vital part (*Mrutyu*) and joints (*Angavikala*).

Avagaha(Immersion/dipping): It means the affected part in a medicated *Kwatha/Taila*.

Agni (Cauterisation): It is Cauterising the site of bite with *Suvarna, Loha* etc and even burning faggot (wooden). It is mainly indicated in *Twak* and *Mamsagata Visha* . It is contraindicated in *Mandali Sarpa*.

Rakthamokshna(Blood-letting):It is done in case where bite site has become *Vivarna, Kathina, Shuna, And Ruja Yuktha*. If it has spread to distance area *Siravyadha* should be done. It is contraindicated in *Bala, Vriddha, Garbhini* .

Selection of vein: The Veins around the site of bite. In case of spread, veins at the end of *Shakha/* in *Lalata* .If vein are not available/visible due to *Shotha* than should go for *Shrunga / Jaluka*. And if blood does not come, *Pragharshana* should be done with *Churna* of *Trikatu, Gruhadhuma, Rajani, Panchalavana, Gorechana, Vartaka*.

Features of *Visha Raktha*: *Puti Gandha , Chata-Chata Shabdha* when put on fire.

Parisheka(Sprinkling): Should be done after *Rakthamokshana* with *Chandana* and *Ushira*.

Vamana(Emesis): During the first phase the ingested poison should be eliminated by emesis, which means if the poison is in the stomach emesis is indicated.

Indication: *Amashaya, Kapha Prakopa, Damsha* in *Hemantha Ritu* and if the bite is above the umbilical region. *Kapha Prakopa* due to *Hridayavarana* procedure accumulates *Kapha* in *Hridaya* causing *Gaurava, Praseka* and *Hrillsa*.

Precaution: Avoid using *Kanji, Kulatha, Taila, Madhya* etc so that *Kapha* does not spread to whole body.

Virechana(Purgation): It is done at the 2nd stage, when *Visha* moves to the *Pakvashaya*. Indication: *Koshta Daha* and *Ruja, Adhmana, Mutrasangha, Purishsangha, Mutra Krichra, Pitha Vikara* .If bite is below umbilical region.

After *Virechana, Agadapana* should be done.

Nasya(nasal medication): It should be done when *Visha* move to *Shira Pradesha* with, *Mula Swarasa* of *Bhandujiva, Bharangi, Asita And Surasa*. Or with *Churna* of *Pippali, Hingu, Vrichikali, Manashila, Shirisha Bija, Apamarga, Lavana*, blowen into the nose, restores consciousness.

Indication: *Shiro Gaurava-Vedana, Alasya, Hanusthambha, Galagraha, Manyasthmba*

Hridayavarana(protection of heart): Poison by its penetration property weakens the heart,so in order to protect it, the patient should be made to drink *Ghrita, Madhu, Majja, Dugdha, Shudha Gairika, Gomaya Rasa And Bhasma, Pakwa Ikshu Rasa, Kaka Nishpidya Rasa, Chaga Raktha* etc

SajnaSamsthapan(Resuscitation): This is a very important procedure which plays a vital role in regaining the conscious state of an unconscious person. It follows, in case of *Sajna Nasha, Vivruthakshi, Griva Bhaghna Tikshna Pradhamana Nasya* should be done. *Siravyadha* in *Shakha* and *Lalata* . *Kruta Kakapada Vrana* on *Shira Pradesha* than keep *Charma/ Mamsa* or *Charma Vriksha Kashaya/ Kalka Lepa* .And also Small drums (*Dundubhis*) smeared with *Agada Lepa* should be sounded around patient is also followed. After regain of consciousness *Vamana-Virechana* should be done.

MrutaSanjeevan(Revivation): This was originated by Lord Brahma before the origination of *Amruta*. *Sprikka*, *Plava*, *Sthouneya* etc. are taken in same quantity & in fine powder form to prepare pill named *Mritasanjivanaagad*. *Mritsanjivanaagad* is used in the form of *Nasya*, *Lepa*, *Dharana*, *Dhumagrahan* etc.

Aushadha(Medication): Using of different *Aushadha* in different condition/complication.

Prativisha(antidote) : It should be given after 5th *Vega* and before 7th *Vega* when *Mantra* and *Aushadha* fails to cure. It is administered after *Suryodaya*, and in *Hemanta* & *Pravruth Ritu* and in *Grishma* only in case of emergency. It should not be administered in *Varsha Ritu* and *Durdina*. Should be given in the dose of 4-6-8 *Yava* in case of *Sarpa Visha*.

Anjana(collyrium): *Devadaru*, *Shunti*, *Maricha*, *Pippali*, *Karavira Patra*, *Karanja*, *Nimba Pushpa*, *Tulsi*, *Aja Mutra* is applied as collyrium which destroys the poison present in eyes.

Indication: *Shunakshi*, *Atinidra*, *Vivarna*, *Vilochana*.

Lepa(paste): *Sheeta lepa* should be done. It pacifies the poison like ceasing of the fire by sprinkling of water

Indication: *Mada*, *Murcha*, *Vishada*, *Hridrava*.

Dhuma(Smoking): Helps to clear off all blocked *Srotas* due to which there will be *Swasa Avarodha*.

Dhuma Agada: Tagara, *Kushta*, *Ghritha*, *Sarpa Shirasa*, *Shirisha Pushpa*. This alleviates all types of poison and edema and also check the entry of snakes in that place.

Lehyam(Linctus): It is generally used as *Anupana*. It is given as a Combination of *Madhu+Ghritha*

Upadhana karma(medication on incised scalp): This procedure includes incision on scalp resembling *Kakapada* and 1 *Bilva* quantity of paste of *Charmakasha* or *Mamsa* of *Aja*, *Go*, *Mahisha*, *Kukkuta* is applied over incision, which absorbs the poison present in the body.

Pradhamana(snuffing): It is followed After *Upadhana Karma Pradhamana* should be done with *Katabi*, *Katuka* And *Katphala Churna*

Pratisarana(Rubbing of agada churna): Done with *Churna* of *Trikatu*, *Gruhadhuma*, *Haridra*,

Pancha Lavana, *Brihati*.

Yukthivyapashraya:

The treatment modalities emphasized in *Ayurveda* have a great significance and are valuable particularly in the remote areas, where there is a lack of medical facilities. It has been specified by *Charaka* that “without entering in the blood stream, poison cannot damage the tissues”¹⁵. Similar concepts have been expressed by *Vagbhata*, who says that “poison cannot damage the tissues without entering into the blood. Even an atom of poison can spread all over the body along with blood and can damage the system”¹⁶. Considering these, priority has been given towards preventing the entry of poison in to the systemic circulation.

Special Treatment: Which are carried out as Folklore treatment like,

1. *Oothu Chikitsa*
2. *Vishakallu*

Oothu Chikitsa¹⁷: Three persons are made to chew drugs like Dry ginger, *Pipper nigrum*, Root of *Aristolochia indica*, *Cyclea peltata*, Beetal leaf, *Saussurea lappa* (*Kushta*) and blow the air from their mouths at the ears and vertex of the patient for 150 times.

This relieves heaviness of head, somnolence and diplopia. It also prevents the development of pulmonary edema.

Vishakallu¹⁸: A medicated stone with anti-poisoning properties to the affected area (snake bite).

Drugs used:

1. Pebbles from the river 50gm
2. Juice of *Ocimum tenuiflorum*, *Anisomales malabarica*, *Leucas aspera*, Piper betle -20mleach and paste of *Santhanum album*-50gm approximately.

Method of preparation: The pebbles ground well and mixed with the said ingredients and prepared in the form of paste. The paste covered with seven leaves of *Aristolochia tagala*. And placed on a rock and roasted using the wood of *Chukrasia tubularis*, *Santalum album*, *Ocimum tenuiflorum* and Camphor. The roasted material again paste of termite soil and soil content obtained from the trees. The above materials are again covered with the leaves of *Aristolochia tagala* and *Aristolochia indica* and then kept under a low fire. The dried mass kept in the ashes of cow dung cakes or dried leaves of cannabis sativa to maintain potency of the stone

Mode of Administration: The stone is directly applied to the bitten part. It sticks there and absorbs the venom from the wound. Then Lord Shiva is propitiated by chanting *Mantras*. When all the venom is absorbed the stone falls away automatically. And it is believed that, it can be used for 20 times.

DISCUSSION:

Visha Chikitsa has been explained since *Vedas*. By knowing the importances of *Visha Chikitsa* for humans *Acharyas* have included this as one among *Ashtanga Ayurveda* i.e Eight Folds of *Ayurveda*. Many medicines have been proved to have anti

poisoning effect. These drugs can be given with various mode of administration like *Anjana* (collyrium), *Nasya*(Nasal drop), *Kakapada*(scalp incision) etc

CONCLUSION:

There are various logistic, marketing and economic issues with the production and supply of ASV. The other drawbacks with ASV therapy are the adverse reactions ranging from early reactions (pruritus, urticaria) to potentially fatal anaphylaxis. Few cases may also develop serum sickness. When we compare both *Ayurveda* and Modern Medicine with respect to this aspect, we find that all these principles which are suggested by modern medicine are already described in *Ayurvedic Samhitas* before thousands of year. Modalities followed in *Ayurveda* are based on scientific approach, it's the time need to apply see the realism of this treatment. This will definitely help to prove the *Ayurveda* in emergency services also. Training of treating physicians and knowledge of protocols to deal with Snakebite cases

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