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-

tocoks, 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 Guidelines. 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:
1. Sarpita-deep punctured
2. Radita-superficial punctured with less venom injected
3. Nirvisha-non poisonous
According to Vagbhata:
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 bitting marks

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

**Lakshana’s**

**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 Savra 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 – tiktasyata, Urdwa & Adho marga raktha agama, Sheeta icha, Dhumako, Mada, Other Lakshna of Pitta.

**Rajimantha Sarpa:** Bite site – Snigdha, Sithira, Pichila, Shopha, Raktha- Sandra, Shita & Pandu, Shirovayatha, Aruchi, Chardhi, Aalasya, Hrrillas, Madhurasyata Kantey Ghuru-Ghuru, Kruchra- Uchvasa & Nishvasa, Nidra, Kasa, Panduta Of Naka Etc, Anga Guruta And Stamba, Srava From Nasa, Akshi, Mukha, Romaharsha, Shwas, Tama, Other Lakshna Of Kapha

**Diagnosis:**

**Vishahari Lehya:**

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:**

<table>
<thead>
<tr>
<th>Chikitsa</th>
<th>Check entry of poison in blood</th>
<th>Eliminative therapy</th>
<th>Symptomatic therapy</th>
<th>Counteracting measures</th>
<th>Pacifying measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arishta Bandhana</td>
<td>Rakta Mokshan</td>
<td>Hrudayavaranam</td>
<td>Mantra</td>
<td>Anjana</td>
<td></td>
</tr>
<tr>
<td>Utkartanam</td>
<td></td>
<td>Vamana</td>
<td>Sajna Samsthapan</td>
<td>Aushadha</td>
<td>Lepa</td>
</tr>
<tr>
<td>Nishpeedanam</td>
<td>Virechan</td>
<td>Mruta Sanjeevan</td>
<td>Prativisha</td>
<td>Dhuma</td>
<td></td>
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<tr>
<td>Cushanam</td>
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<td>Nasyam</td>
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<td>Agni</td>
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<td>Pradhahanam</td>
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<tr>
<td>Avagaham</td>
<td></td>
<td></td>
<td></td>
<td>Pratisaranam</td>
<td></td>
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</tbody>
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**Mantra:** Chakrapani prefers Mantra as foremost and par excellence Upakrama among others, which nullifies the poison. 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 mechanisms.

**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 spread 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.

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.

**Table 2 Chaturvimshati Upakramas**

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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 Siravyadhya should be done. It is contraindicated in Bala, Vridhha, 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 Shabda 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 Hridayavaranana 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, Muta Krichra, Pittha 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 Bijja, Apamarga, Lavana, blown into the nose, restores consciousness.

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

Hridayavaranana (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, Maija, Dugdha, Shudha Gairika, Gomaya Rasa And Bhasma, Pakwa Ikshu Rasa, Kaka Nishpidya Rasa, Chaga Raktha etc.

Sajna Samsthapan (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. Siravyadhya in Shakha and Lalata. Kruta Kakapada Vrana on Shira Pradesha than keep Charma/ Mamsa or Charma Vriksa 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. Mritasanjivanaagad 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 Grisimha 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 Swasavardha.

Dhuma Agada: Tagara, Kushta, Ghrita, Sarpa Shirass, 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+Ghrita

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.

Yukthiyapashraya:
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 into 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 (Kushanta) 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.

Vishakallu\textsuperscript{18}: A medicated stone with anti-poisoning properties to the affected area (snake bite).

Drugs used:
1. Pebblesb from the river 50gm
2. Juice of \textit{Ocimum tenuiflorum}, \textit{Anisomales malabarica}, \textit{Leucas aspera}, Pepper bottle -20ml; each and paste of \textit{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 \textit{Aristolochia tagala}. And placed on a rock and roasted using the wood of \textit{Chukrasia tubularis}, \textit{Santalum album}, \textit{Ocimum tenuiforum} 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 \textit{Aristolochia tagala} and \textit{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 \textit{Mantras}. When all the venom is absorbed the stone falls away automatically. And it is believed that, it can be used for 20 times.

\textbf{DISCUSSION:}

\textit{Visha Chikitsa} has been explained since \textit{Vedas}. By knowing the importances of \textit{Visha Chikitsa} for humans Acharyas have included this as one among \textit{Ashtanga Ayurveda} i.e Eight Folds of \textit{Ayurveda}. Many medicines have been proved to have anti-poisoning effect. These drugs can be given with various mode of administration like \textit{Anjana} (collyrium), \textit{Nasya}(Nasal drop), \textit{Kakapada} (scalp incision) etc

\textbf{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 \textit{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 \textit{Ayurvedic Samhitas} before thousands of year. Modalities followed in \textit{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 \textit{Ayurveda} in emergency services also. Training of treating physicians and knowledge of protocols to deal with Snakebite cases

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