



SIDDHA TREATMENT FOR SNAKE ENVENOMING WITH REFERENCE TO VIPER (*VIRIYAN*) BITES.

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Abstract:

Siddha system of medicine is a unique system of medicine which has been flourished with a wide range of treatment methods and provides definite cure to a vast number of diseases. In the Siddha system, the siddhars had provided us with the knowledge in the field of toxicology as such how the toxins affect the human body ie., both physiological and psychological effects. Also, provided the treatment and cure to a wide range of toxins ranging from plant biotoxins to animals biotoxins as such the bites of rats, dogs, spider, scorpion, monkeys, snakes, cats etc., in the literature. Around the world, snake bite seems to be a common one with higher human incidence. Not all snakes are poisonous but a few species like the Taipan, Krait, Blackmamba, Cobra, Vipers, Rattle snake are deadly poisonous. In India, nearly 45,000 lives are lost from snake envenomings. On an average 60% of such fatal incidence are caused by vipers alone. Vipers are called *Viriyans* in Tamil. In this paper, we have discussed the toxic effects of viper venom in the biological system of human body, its treatment, and cure with the herbs which are provided in the Siddha literatures.


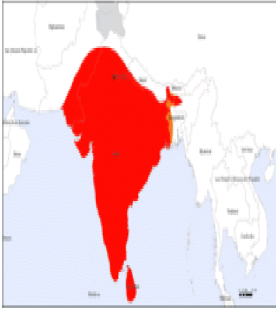


Key Words:



Snake venom, Snake bite, *Viriyana kadi*, Envenoming symptoms, *Viriyana*.

Introduction:

Snakes belong to the sub-order *Serpentes*. They all have scales; do lack eyelids and ear openings with the limbless body and bifid tongue. There are more than 3,000 species of snakes been found all around the globe. Of which nearly 600 species are found to be venomous. In India, around 60 highly venomous species of snakes exist. Among these only four species poses a major threat to the human community, they are the Indian Cobra (*Naaga pambu*), the Indian Krait (*Kattu Viriyan*), Russell's Viper (*Kannadi Viriyan*), the Saw-Scaled Viper (*Suruttai Viriyan*) which are commonly called "The Big Four". From the above mentioned species, we reviewed the siddha treatment for the bites of Krait, Russell's Viper and Saw-Scaled Viper as they are commonly called "*Viriyans*" in *Tamil*.

An Overview on *Viriyans* in Scientific approach:

S. No	Species	Taxonomic Classification	Prevalence	Habitat	Appearance
1	 Russell's Viper: B.N: <i>Daboia russelii</i> T.N: <i>Kannadi Viriyan</i>	Family: Viperidae Genus: Daboia		Dry Open lands, farm fields scrubs having low bushes. Dry Savannas	Wide triangular head with a blunt snout, large nostrils and small eyes with vertical pupils. Length: Up to 1.5m Colour: Three rows of reddish brown spots outlined in black and white
2	Saw- Scaled Viper B.N: <i>Echis Carinatus</i> T. N: <i>Surrutai Viriyan</i> 	Family: Viperidae Genus Echis		Desert, rainforests, grassland	Stout body with pear-shaped head and vertically elliptical pupils with a short thin tail. Length: 0.3 to 0.9m Colour: Shades of brown, grey or orange with darker dorsal blotches and lateral spots

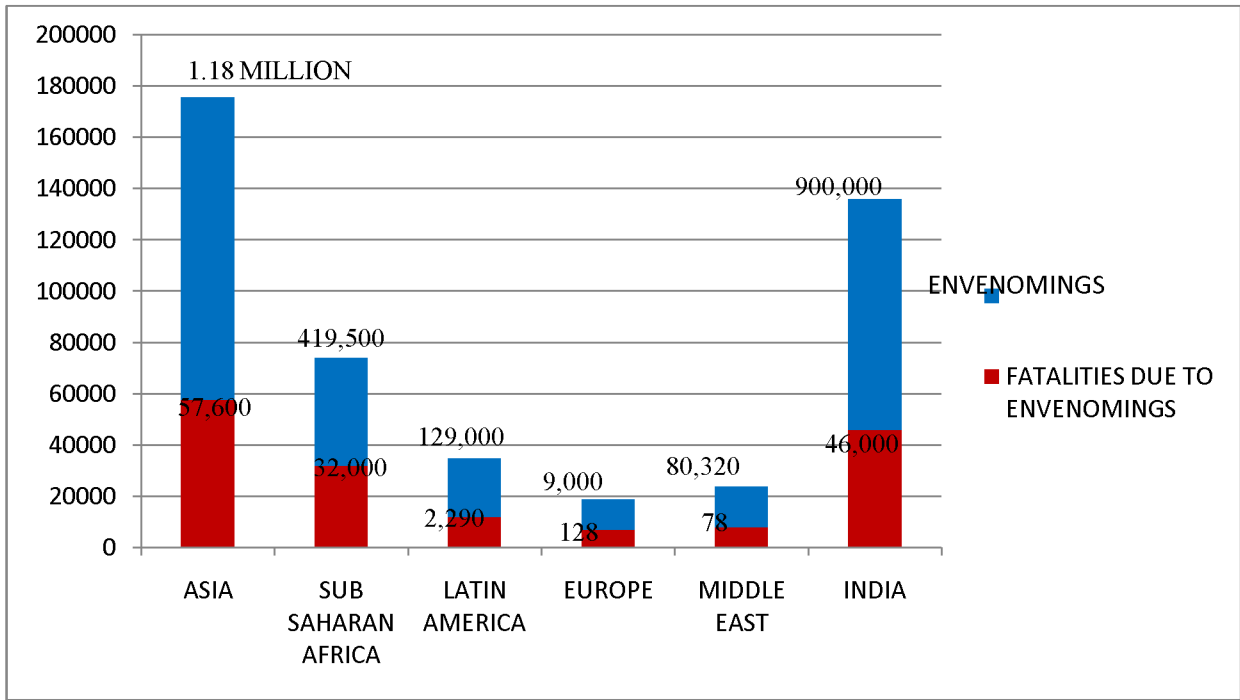
3	 <p>Krait: B.N:<i>Bungarus Caeruleus</i> T.N:<i>Kattu viriyan</i></p>	<p>Family: Elapidae Genus: Bungarus</p>		<p>Rodent holes, termite mounds Jungle, and farm lands</p>	<p>Flathead, small eyes with rounded pupils cylindrical body with a short rounded tail. Length: Upto 1.75m Colour: Black on bluish black with cross bars</p>
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B.N - Binomial name; **T.N**-Tamil Name.

S.No	Species	Prey	Reproduction	Nature	Lethal Dose	Lethal Period
1	<p>Russell's Viper: B.N:<i>Daboia russelii</i> T.N:<i>Kannadi Viriyan</i></p>	<p>Rodents, lizards, Frogs and birds</p>	<p>Viviparows (bears live young ones)</p>	<p>Aggressive, demeanow</p>	<p>0.035 mg/kg</p>	<p>3days</p>
2	<p>Saw- Scaled Viper B.N:<i>Echis Carinatus</i> T. N: <i>Surrutai Viriyan</i></p>	<p>worms, slugs, frogs, toads etc.,</p>	<p>Ovo viviparous</p>	<p>Fiery</p>	<p>0.12 mg/kg</p>	<p>5 days</p>
3	<p>Krait: B.N:<i>Bungarus Caeruleus</i> T.N:<i>Kattu viriyan</i></p>	<p>rats, mice, frogs, bline, worms, Most often cannibalistic in nature</p>	<p>Oviparous</p>	<p>Often docile during the day. But gets agitated easily</p>		

B.N - Binomial name; **T.N**-Tamil Name.

Envenoming Statistics around the world



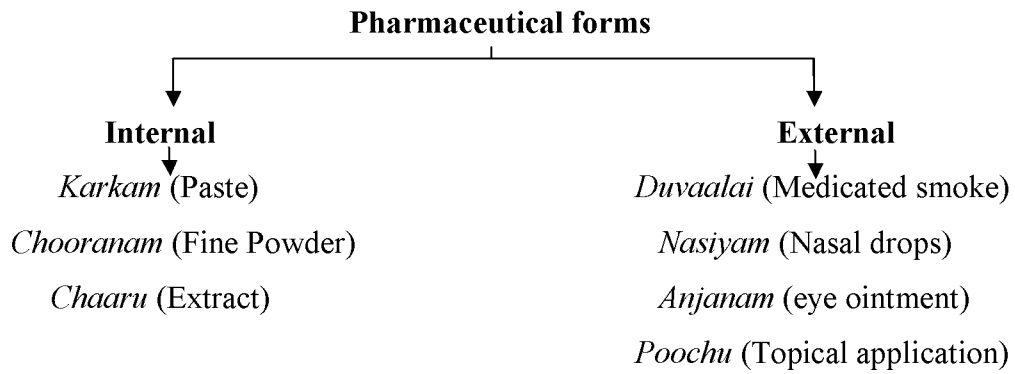
Symptoms after envenoming:

Literature evidence	Transliteration	Current Aspects
எரிந்திடுந் தீப்போல் மேனி யிருந்திடுங் <i>Erinthidunth Teepol Menirunthiunk</i>	Burning sensation all over the body	-
கடிவாய் தன்னிற் சொரிந்திடு முதிரம் <i>Kadivai thannir Sorinthidu Muthiram</i>	Bleeding at the site of the bite	Severe Pain at the Site of bite
வேர்வை <i>Vervai</i>	Sweating	Sweating
சுழல் தலை <i>Sulalthalai</i>	Vertigo	-
செவியுங் கேளா <i>Seviung Kela</i>	deafness	-
குமட்டலாகும் <i>kumattalagum</i>	Vomitting	Vomitting
துடம்பு நொந்து வெதும்பியே <i>Thudampu Nonthu Vethumbiye</i>	Body ache, fever	-
கடிவாய் விம்மிக் குழியுமே	Depression at the site of the bite	Redness and

<i>Kadivai Vimmi Kuliume</i>		swelling around the bite
லூரல் கொண்டு <i>Looral Kondu</i>	Salivation	Increased Salivation
நீர்மலங்கள் கண்டிடு மிரத்த மாகில் <i>Neermalangal Kandidu Miratha Makil</i>	Watery stools with blood	-

When a person who has been bitten by a snake feels the above-mentioned symptoms then that snake must be a *Viriyān*.

Fig.1: Pharmaceutical form handled for the treatment of Viriyān snake bites



Treatment Protocol based on Siddha Literature:

S. No	Form of Medicine and administration	Main Ingredients	AM	AH	AC	EI	Route of administration	Dose
1.	Duvalai	<i>Boerhavia diffusa</i> , (<i>Mookirattai</i>)		+	+	+	E	QS
2.	Poochu	<i>Cynodon dactylon</i> (<i>Arugu</i>), <i>Gingelly Oil</i>				+	E	QS
3.	Nasiyam/Anjanam	<i>Allium Sativum</i> (<i>Poondū</i>) Salt				+	E	QS
4.	Nasiyam	<i>Zingiber officinalis</i> (<i>Dried ginger - sukku</i>), <i>Caesalpinia crista</i> (<i>Kazharchikai</i>), <i>Pongamia glabra</i> (<i>Pungun</i>)				+	E	QS
5.	Poochu	<i>Calotropis gigantean</i> (<i>Erukku</i>), <i>Cow drung</i>				+	E	QS
6.	Nasiyam	<i>Allium sativum</i> (<i>Poondū</i>), <i>Acalypha</i>				+	E	QS

		<i>fruticosa. (sinni)</i>							
7.	Poochu	<i>Abrus precatorius (Kundri)</i>					+	E	QS
		<i>Cassythia filiformis (Kothan)</i>							
		<i>Zizipha oenoplia (surai)</i>							
8.	Poochu	<i>Pongamia glabra (Pungun)</i>						E	QS
		<i>Solanum nigrum (Manathakkali)</i>					+		
9.	Poochu	<i>Zizipha oenoplia (surai)</i>						E	QS
		<i>Ziziphus mauritiana (Ilanthai)</i>							
		<i>Calotropis gigantean (Erukku)</i>							
10.	Churnam	<i>Aristolochia bracteolata (Adutheenda palai)</i>					+	E/I	QS
11.	Karkam	<i>Rungia parviflora (Thavasu murungai)</i>					+	E/I	QS
12.	Duvalai(E) / Karkam(I)	<i>Solanum nigrum (Manathakkali)</i>						E/I	QS
		<i>Piper nigrum (milagu)</i>					+		
		Milk							
13.	Karkam	<i>Pergularia daemia (Veliparuthi)</i>					+	E/I	QS
		<i>Acorus Calamus (Vasambu)</i>	+				+		
14.	Karkam	<i>Plumbago zeylanica (kodiveli)</i>	+				+	I	3.01 gm
15.	Karkam	<i>Ocimum album (kanchangorai)</i>	+				+	I	QS
16.	Karkam	<i>Tamarindus indica (Puli)</i>	+	+	+		+	I	QS
17.	Karkam	<i>Cadaba fruticosa (Viluthi)</i>						I	QS
18.	Churnam	<i>Plumbago zeylanica (kodiveli)</i>	+				+	I	Pinch
19.	Chaarau	<i>Abrus precatorius (Kundri)</i>					+	I	168 ml
20.	Chaarau	<i>Albizia odoratissima (Usilam)</i>						I	168 ml (For 7 days)
21.	Chaarau	<i>Piper nigrum (milagu)</i>					+	I	QS
		<i>Indigofera tinctoria</i>			+	+	+		

		(Aruri)						
22.	Chaarau	<i>Gymnema sylvestre</i> (Siru Kurinjan)	+				+	I QS
		Milk						
23.	Chaarau	<i>Capsiam annuum</i> (Milagai)						I QS
		<i>Acalypha indica</i> (Kuppaimeni)					+	
24.	Chaarau	<i>Cleome gynandra</i> (Thaivelai)						I 106 ml (3 times)
		<i>Abrus precatorius</i> (Kundri)					+	
25.	Karkam	<i>Indigofera tinctoria</i> (Avuri)		+	+		+	I +
		<i>Luffa acutangula</i> (Peerku)						
26.	Chaarau	<i>Tephrosia purpurea</i> (Kozhunji)						I 106 ml (3 times)
		<i>Albizia lebbek</i> (Vaagai)					+	
27.	Chaarau	<i>Leucas aspera</i> (Thumbai), Salt					+	I QS
28.	Chaarau	<i>Tephrosia purpurea</i> (Kozhunji)						I QS
		<i>Cyamopsis tetragonoloba</i> (Kothavarai)						
		<i>Aneca catechu</i> (Paaku)		+	+		+	
29.	Karkam	<i>Mimosa pudica</i> (Thottar surungi)						I QS
		<i>Alternanthera sessilis</i> (Ponnanganni)					+	
30.	Karkam	<i>Ricinus communis</i> (Aamanaku)						I QS
		<i>Euphombia lingularia</i> (Kalli)						
		<i>Cynodon dactylon</i> (Arugn)					+	
31.	Karkam	<i>Piper beetle</i> (Vetrilai)		+	+		+	I QS
		<i>Vitex negundo</i> (Nochi)					+	
		<i>Madhuca longifloia</i> (Iluppai)						
		<i>Acalypha indica</i> (Kuppaimeni)					+	

QS- Quantity sufficient, AM -Anti - Myotoxic activity, AH- Anti – Hemorrhagic,
AC - Enzyme Inhibitory action, E - External, I - Internal,
Karkam – grinded a fresh herbal paste , Chaaru – fresh herbal juice

Discussion

As all the medicines that have been told above are completely effective because the herbs which forms it has been scientifically analysed and are proved to possess the aforementioned actions provided in the table. Siddha literatures has discussed many therapeutic formularies for the treatment of snake bites. Hence, there must not be any second guess in the effectiveness of the Siddha medicines in the treatment of snake bites. Still it is a timely position to concentrate more in this toxicology and envenoming area. There is a huge scope for Postgraduate branch exclusively specialized as toxicology, Government and NGO research units to focus on Anti-toxic Formulations/medicines and research. This could help us to move our Siddha toxicology aspects to the worldwide.

Conclusion:

Polyvalent Anti-Venom has been widely used all around the globe to treat snake envenoming but their availability and accessibility at the time of need always remain as an unanswerable question due to their shortage in production and higher price. But the herbs that are mentioned in this paper are handy in nature and of no cost hence we can neglect the “if”s that comes in between in saving a life. We hope this paper would help a lot of people to save atleast some people’s lives. Also, from this, we would like to thank the Siddhars for giving us the wonderful Siddha system of Medicine to help a person which is a boon to the human community and are proud to be a part of the system.

Abbreviations

QS - Quantity sufficient,
AM -Anti - Myotoxic activity,
AH - Anti – Hemorrhagic,
AC - Enzyme Inhibitory action,
E - External,
I - Internal

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