

Herbal Antidotes Used for Antivenom Treatment from 32 - Shirala Tahasil, Dist. Sangli (M.S.), India

Shubhangi R.Kamble ¹, Rekha R.Deokar ², Sarjerao R. Patil ³, Satish R.Mane ⁴

Assistant Professor, D.A.B.N.College, Chikhali, Shirala, Sangli, M.S, India. ^{1,2}

Principal, D. A. B .N. College, Chikhali, Shirala, Sangli, M.S, India.³

Director of Physical Education, D. A. B .N. College, Chikhali, Shirala, Sangli, M.S, India.⁴

ABSTRACT: 32- Shirala is located at hilly region of Sahyadri edges in Sangli district. It is worldwide famous for 'Nagpanchami Festival'. Obviously it is famous for different types of snakes like Indian common cobra (*Naja naja*), Russells Viper (*Daboia russellii*), saw scaled viper (*Echis carinatus*), and common krait (*Bungarus ceruleus*). Snake bite is a major socio - medical problem still depending on the usage of antisera as the one and only source of first aid treatment which has its own limitations. Mostly in rural areas, health centers are inadequate and snake bite victims mostly depends on traditional healers and herbal antidotes as first aid treatment in India. All related information about snake bite and its first aid treatment is collected by local people and vaidus from Shirala Tahsil. The present review has been focused on the varied folk and traditional herbs and their antisnake venom compounds

KEYWORDS: Herbal medicine, Shirala, snake bite.

I. INTRODUCTION

Since time immemorial, herbal medicine also referred as an alternate medicine or traditional medicine, has been in use in India. Nearly 80% of the human population is reported to be dependent on plant-based medicines. These are used for primary health care not only in rural areas of developing countries, but also in developed countries, where modern medicines are predominantly used. Though modern allopathic drugs have inundated the market in the present days but due to their side effects, peoples are attracted towards herbal medicines and their consumption is increased (1). In Shirala, it has been observed that regional vaidus have an excellent herbal remedies for snake bite.

Generally aqueous, methanol or ethanol extract is prepared with the plant parts. Topical application of the plant or its sap on the bitten area, chewing leaves, bark or drinking plant extract or decoction are some procedures intended to counteract snake venom activity. The root of *Hemidesmus indicus*, *Mimosa pudica*, leaves of *Acalypha indica* etc. are used in herbal medicines. It is further believed that if a person lives on food cooked on a fire of Neem wood, he will be immune to snake venom. Besides them, some other rural physicians have also adequate knowledge of herbs used in this treatment and they whisper certain mantras during the courses of treatment (2 and 3), although it has not been confirmed whether these uttering are effective or not. However the rural people have deep faith on these mantras and herbal remedies prescribed for the treatment of snake bite.

Snake uses modified salivary glands for injecting venom during snake bite. Venom is a modified form of saliva evolved in chemical digestion and useful in killing prey. During snake bite, the venom passes from the venom gland through a duct into the snake's fangs, and finally into its prey. Snake venom is a combination of numerous substances with varying effects.

International Journal of Innovative Research in Science, Engineering and Technology

(An ISO 3297: 2007 Certified Organization)

Vol. 4, Issue 9, September 2015

The most common symptoms of all snake bites are panic. Due to fearful and emotional instability, symptoms such as nausea and vomiting, diarrhea, vertigo, fainting, tachycardia, and cold, clammy skin are observed (4). Medicinal plants are the local heritage with global importance. In most areas plants and their extracts have been used for the treatment of snake bite, where venomous species are endemic (4). In spite of this wealth of ethno pharmacological information only few species have been tested scientifically for anti- venom activity and the species where an active compound has been isolated are very few in number. Although many plants may not neutralize the venom itself, they may be used to treat snake bite because they alleviate some of the symptoms (fear and panic) by tranquilizing compounds. This report enlists the plants used traditionally against snakes and snake bite in Western region of Shirala Tahasil .

II. STUDY AREA

Shirala Tahsil is located between longitude 73⁰ 40' E and 73⁰ 53' E and latitude 17⁰.03' N and 17⁰ 20' N at hilly edges of sahyadri near the Chandoli National park, in Sangli district of Western Maharashtra. It is one of the hot spot for biodiversity from Western Ghat.



III. MATERIAL AND METHOD

The present study was conducted in Western region of Shirala Tahasil. Khundalapur, Arala , Nathawade , Mandur, Charan villages are selected as study area. The study is based on personal interviews of local peoples and vaidus in formal discussion and observation. Systemic field trips of the study sites were made during year 2010 to 2014. Data regarding to herbal remedies, collected specimens were identified with the help of floristic literature. (5).The information regarding active principle and its mode of action collected with the help of books and journals of pharmacology.

IV. OBSERVATIONS

The data of collected information is compiled in the form of Botanical name, local name, family, active principle, mode of administration , active principle and mode of action of the plant and recommended treatment given in observations.(Table No.1)

International Journal of Innovative Research in Science, Engineering and Technology

(An ISO 3297: 2007 Certified Organization)

Vol. 4, Issue 9, September 2015

Table No.1 List of herbal antidotes used for Antivenum treatment.

Sr. No.	Botanical name and Family	Local name	Mode of administration	Active principle	Mode of action
1.	<i>Hemidesmus indicus</i> (Linn.) Asclpediaceae	Anantmul	Roots	sitoserol. 2hydroxy-4methoxy benzoic acid	Neutralises lethal effect and haemorrhagic activity against viper russeli
2.	<i>Tinospora cordiafolia</i> (Willd.) Hook. Minispermaceae	Gulvel	Leaf juice along with garlic paste applied on the spot and also taken orally.	tinosporine and tinosporidine	antidote for Cobra bite.
3.	<i>Acalypha indica</i> (Linn.) Euphorbiaceae	Khokali	Root paste applied on bitten area	Nicotiflorin, acalyphin	Neutralises viper russelli venom.
4.	<i>Achyranthes aspera</i> (Linn.) Amaranthaceae	Aghada	For snake bites root paste is given with water.	ecdysterone	The patient vomits and regains consciousness
5.	<i>Calatropis procera</i> (Linn.) R.Br. Asclepiadaceae	Rui.	Plant latex is applied	Asclipine bacteriolytic enzyme in latex	Antiinflamatory and analgesic in Cobra bite.
6.	<i>Vitex nigundo</i> (Linn.) Verbinaceae	Nirgudi	Leaf extract of <i>Viex nigundo</i>	Tris(2,4-di- <i>tert</i> - butylphenyl) phosphate	anti-inflammatory activity against viper russelli.
7.	<i>Datura metel</i> (Linn.) Solanaceae	Dhotra	Infusion of dried leaves and stem bark.	Apoatropine ,hyoscine and daturiline.	antidote for Cobra bite.
8.	<i>Curcuma longa</i> linn <i>Zingiberaceae</i>	Halad	Powder of rhizome.	Ar-turmeron Turmerine protine	Antilethal activty against snake venom. Acting as potent antioxidant against Naja naja venom
9.	<i>Allium sativum</i> (L) Lilliacae	Lasun	paste of leaf buds and inflorescence is given orally	Potassium salt of gymnic acid	Antidote for Cobra bite
10.	<i>Azadirachta indica</i> Melliaceae	Neem	Leaf extract	n-acetyl benzene, nimbolide, isonimbolide, nimbothalin	inhibits the cobra and Russells viper venoms
11.	<i>Mimosa pudica</i> L. Mimosaceae	Lajalu	Root extract	Mimosine	Neutralization of lethally myotoxicity and toxic enzyme of Naja venom
12.	<i>Mangifera indica</i> <i>Anacardiaceae</i>	Mango	Extract of stem bark	Pentagalloyl glucopyranose	Antihemorrhagic and antidermonecrotic against Naja naja venom.

V. RESULTS AND DISCUSSION

The herbs used in the treatment of snake bites are easily available, common and cheaper. The method of preparation and mode of action is also simple and convenient. The rural people below poverty line can afford the

International Journal of Innovative Research in Science, Engineering and Technology

(An ISO 3297: 2007 Certified Organization)

Vol. 4, Issue 9, September 2015

treatment and their personal faith and belief gave encouraging result in the treatment. The present paper gives detailed information on 12 plant species as herbal remedies for first aid treatment against snake bites by the rural people and vaidus of the Shirala Tahasil. The data indicates great importance of indigenous knowledge in therapeutic uses. The *Mimosa pudica* L, *Achyranthes aspera*, are excellent for the treatment of snake bites (6, 7, 8, 9 and 10). Due to more need of ethnomedicinal plants and more earnings, local villagers have been motivated for conservation and cultivation of these plants. These ethno medicinal data may provide a base to start the search the new compounds related to phytochemistry, pharmacology and pharmacognosy. This may provide new sources of herbal drugs and help to understand the molecular basis of their activities. Moreover, it may further be mentioned that over exploitation of these species in the name of medicine may lead some species ultimately to the disappearance in future. Therefore, attention should also be made on proper exploitation and utilization of these medicinal plants.

VI. ACKNOWLEDGEMENTS

The authors are grateful to the local people of the Shirala region who contributed and gave information about the plants.

REFERENCES

1. Seth S.D. and Sharma B. Medicinal plants in India. *Indian J Med Res.* 120, 9-11, 2004.
2. Dwivedi S.N. Herbal remedies among the tribal's of Sidhi district of Madhya Pradesh. *I bid*; 28(3): 675-687, 2004.
3. Dwivedi S.N. Ethnobotanical studies and conservation strategies of wild and natural resources of Rewa District of Madhya Pradesh. *J. Econ. Taxon. Bot.*, 27 (1), 233-244, 2003.
4. Kitchens, C., Van Mierop, L... Envenomation by the Eastern coral snake (*Micrurus fulvius fulvius*). A study of 39 victims. *J A M A* 258, 12: 1615- 1618, 1987.
5. Evans, Trease and Evans pharmacognosy, 15th edition, Vinod D. Rangari Pharmacognosy and phytochemistry. vol. I
6. Theodore Cooke; The Flora of the presidency of Bombay, Botanical survey of India, Calcutta, Vol. I-III, 1967.
7. Kini, R. M., Gowda T.V., Studies on snake venom enzymes; Part -1: Purification of ATP ase, a toxic component of *Naja naja* venom and its inhibition by potassium gymnemate. *Indian Journal of Biochemistry and Biophysics* 19,152 -154, 1982.
8. Paul, V.K., 1993. Animal and insect bites. In: Singh M (Ed). Medical Emergencies in Children, New Delhi, Sagar Publications.
9. Vishwanath, B.S., Rao, A.G.A., Gowda, T.V., Intraction of phospholipase A₂ from *Vipera russelli* venom with ristolochoic acid: A circular dichroism study. *Toxicon* 25, 939- 946,1987.
10. Kapil A, Sharma S. Immuno potentiating compounds from *Tinospora cordifolia*. *J Ethnopharmacol.*; 58 (2):89-95, 1997.