

CONCEPTUAL STUDY ON THE ANTITOXIC ACTION OF JEEVARAKSHA GULIKA

Vijitha Vijayan^{1*}, Neethu P.¹, Athulya C. M.¹ and Ittoop J. Ancheril²¹PG Scholar, Dept. of Agadatantra, MVR Ayurveda Medical College, Parassinikkadavu, Kannur, Kerala.²Asst. Professor, Dept. of Agadatantra, MVR Ayurveda Medical College, Parassinikkadavu, Kannur, Kerala.***Corresponding Author: Vijitha Vijayan**

PG Scholar, Dept. of Agadatantra, MVR Ayurveda Medical College, Parassinikkadavu, Kannur, Kerala.

Article Received on 01/11/2017

Article Revised on 22/11/2017

Article Accepted on 12/12/2017

ABSTRACT

Ayurveda is an ancient science of India having *Ashtangas*(eight branches). Among these eight branches, *Agadatantra* is a unique branch that deals with toxicology and its management. There are many *Agada yogas*(formulations) mentioned in traditional toxicological texts having very potent ingredients and which are faster in action. *Jeevaraksha gulika* is one among them. It is a herbo mineral preparation which contains highly potent ingredients capable of managing the complications produced by venom. This *yoga* is being used by traditional practitioners for many years and has found good efficacy in the emergency management of snake bite envenomation. Here an attempt is made to carry out a conceptual study on the antitoxic action of *Jeevaraksha gulika* according to the reference in *Prayoga samuchaya*, *Panchama paricheda*, *Kalavanchana* prakarana.

KEYWORDS: *Jeevaraksha*, *sarpa visha*, *Agadatantra*.**INTRODUCTION**

Agadatantra is a unique branch of *Ayurveda* that deals with natural poisons(*sthavara and jangama*) and artificial poisons (*gara visha*). In *Agadatantra*, whole domain of poisonous animals are grouped under *jangama visha*(animal poisons)which includes snakes, insects, rats, spiders, scorpions, leeches, hornets and other creatures Among these, snake bites or *sarpa damsha* are considered to be of great importance due to their high mortality rate.

Kerala has got a rich traditional *Ayurvedic* background where management of snake bite envenomation is significantly carried out. A well planned treatment protocol is being followed by *vishavaidyas* (toxicologists) in handling these emergency situations. They manage these conditions with highly potent and fast acting formulations after considering both subjective and objective parameters. There are wide ranges of highly potent and fast acting formulations mentioned in traditional toxicological texts which are still in practice at various parts of Kerala proven to be effective in *sarpa vishas* (snake poison). *Jeevaraksha gulika* is one among them which is well known among traditional practitioners for its fast action. It should be administered to the patient with in very few hours of snake bite.

Pappinisseri visha chikitsa Kendra, Kannur is a renowned institution in India which plays a versatile role in the diagnosis and treatment for snake venom and other poison threats to human beings. There is a unique protocol followed in this institution for the management

of snake bite cases. *Jeevaraksha gulika* was formerly used here in the emergency management of snake bite cases.

SNAKE BITES IN INDIA

Most snake bites are caused by non-venomous snakes. Of roughly 3,000 known species of snake found worldwide, only 15% are considered dangerous to human beings.^[1] They are distributed all over the world except in Arctic, Newzealand and Ireland and more prevalent in temperate and tropical countries. Snake bites are an important public health problem in many countries. Since reporting is not mandatory in many regions of the world, snake bites often go unreported.^[2]

India has long been known to have more snake bites than any other country. WHO estimates that 20,000 -25,000 people die in India every year due to snake bite complications.^[3] Snake bite deaths occurred mostly in rural areas and are more common in males than females. Those who survive the bite for a period still die due to delay in medical intervention, unable to reach hospital in golden hour or due to lack of protocols. The accurate study to determine the frequency of snake bites has ever been conducted. Hence the exact epidemiology or the mortality in snake bite cases are generally unavailable.

JEEVARAKSHA GULIKA^[4]

The term *Jeevaraksha gulika* consists of two words- '*jeeva*' and '*raksha*'. *Jeeva* means life and *raksha* means to protect or save. Thus from the name itself we can understand the significance of the medicine. This formulation is composed of 20 drugs⁴. Two units used

for measuring the quantity of ingredients in the *yoga* of *Jeevaraksha Gulika* are 'Kazhanju' and 'Panattuka' (ancient weighing units).

1. VANGA^[5]

Chemical Formula: Sn (Stannum)

Rasa: Tiktha

Guna: Ruksha, Laghu

Veerya: Ushna

Doshagnata: Kaphagna, Kinchit pithakopanam

Karma: Balya, Krimighna, Vishaghana, Vrishya, Vranahara

Vyadhi prabhava: prameha, Krimiroga, Pandu, Visharoga, Sukra kshaya

Grahani, prajnakaram,

2. PARADA^[6]

Chemical Formula: Hg (Hydrargirum)

Rasa: Shad rasa

Guna: Snigdha, Sara

Veerya: Ushna

Vipaka: Madhura

Doshagnata: Tridosahara

Karma: Kushtaghna, Akshirogaghna, Sarvamayahara, Dehasiddhikara, Vrana sodhana and ropana

Vyadhi prabhava: Kushta, Vataroga, Akshiroga

3. HARATALA^[7]

Chemical Formula: AS₂S₃ (Arsenic Trisulphide)

Rasa: Katu, kashaya

Guna: Snigdha, Ushna,

Veerya: Ushna

Doshagnata: Kaphahara

Karma: Kustahara, Vishahara, Vranaghna

Vyadhi prabhava: Kusta, Visharoga

4. MANASHILA^[8]

Chemical Formula: AS₂S₂ (Arsenic Disulphide)

Rasa: Tiktha, Katu

Guna: Guru, Snigdha

Veerya: Ushna

Doshagnata: Kaphavatahara

Karma: Rasayana, Vishaghna, Kandughna, Kasaghna

Vyadhi prabhava: Bhutharoga, Visharoga, Kshaya, Swasa, Kandu, pandu

5. HINGULA^[9]

Chemical Formula: HgS (Mercuric Sulphide)

Rasa: Tiktha, Katu,

Guna: Ushna

Veerya: Ushna

Doshagnata: Kaphapittahara

Karma: vishaghna

Vyadhi prabhava: Kusta, visarpa, visha,

6. TANKANA^[10]

Chemical Formula: Sodium tetra borate Na₂ B₄ O₇. 10 H₂O

Rasa: Katu

Guna: Ruksha, Teekshna

Veerya: Ushna

Doshagnata: Vatakaphahara

Karma: Amahara, Vishahara, Swasakasahara, Ruchya, vrananasaka,

Vyadhi prabhava: Visharoga, Kasa, Swasa

7. TUTTHA^[11]

Chemical Formula: CuSO₄.5H₂O

Rasa: Kashaya, Katu

Guna: Laghu

Veerya: Ushna

Doshagnata: Tridosahara

Karma: Vishaghna, Rasayana, Kustaghna, Vibandahara

Vyadhi prabhava: Kusta, Visha, Gara, Amlapitta, Switra

8. SPHATIKA^[12]

Chemical Formula: K₂SO₄ Al₂ (SO₄)₃. 24 H₂O

Rasa: Kashaya, Katu, Amla

Guna: Guru, Snigdha

Veerya: Ushna

Doshagnata: Tridosahara

Karma: Vranaghna, Vishanashini, Netrahita, Keshya

Vyadhi prabhava: Vrana, Visha, Switra, Netra roga

9. GANDHAKA^[13]

Chemical Formula: S (Sulphur)

Rasa: Katu, Tiktha, Kashaya

Guna: Ushna, Sara

Veerya: Ushna

Doshagnata: Kaphavatahara, Pittala

Karma: Deepana, Vishahara, Krimighna, Kandughna, Rasayana

Vyadhi prabhava: Kandu, Kusta, Visarpa, Visha roga, Pleeha roga

10. HINGU^[14]

Latin name: *Ferula asafoetida*

Family: Umbelliferae

Rasa: Katu,

Guna: Laghu, Snigdha, Teekshna

Veerya: Ushna

Vipaka: Katu

Doshagnata: Kaphavatashamaka

Vyadhi prabhava: Sula, Gulma, Anaha, Udara, Krimi, Apasmara, Aanaha

Karma: Anulomana, Deepana, Pachana, Ruchya, Sulaghna,

Krimighna, hridaya, vatakaphaprasamana

11. SAINDHAVA^[15]

Chemical name: Sodium chloride impure

Rasa: Madhura, Lavana

Guna: Snigdha, Laghu

Veerya: Sheeta

Vipaka: Madhura

Doshagnata: Tridosagnatha

Karma: Rochanam, Deepanam, Chakshusya, Vrishya, pachana

Vyadhi prabhava: Hridroga, Netra roga, Vrana, Hikka, Aruchi, Vibandha

12. KATTU CHANAKA

Kattu chanaka is the first faeces of calf. The colour of kattuchanaka is greenish yellow. Ideally fresh kattuchanaka should be used for the medicinal purpose.

13. BAKULA BEEJA^[16]

Latin Name: *Mimusops elengi*

Family: Sapotaceae

Rasa: Kashaya, Katu,

Guna: Guru, kinchit ushna

Veerya: Sheeta

Vipaka: Katu

Doshagnata: Pitta kaphahara

Karma: Vishahara, Krimighna, Dantya,

Vyadhi prabhava: Visha, Switra, Dantaroga, Krimiroga

14. VACHA^[17]

Latin Name: *Acorus calamus*

Family: Araceae

Rasa: Katu, Thikta

Guna: Laghu, Teekshna

Veerya: Ushna

Vipaka: Katu

Doshagnata: Vata kaphahara

Karma: Medhya, Kantya, Sulaghna, Bhutaghna, Jwaraghna

Vyadhi prabhava: Apasmara, Unmada, Vibandha, Krimi, Bhutaroga

15. SHUNTI^[18]

Latin Name: *Zingiber officinalis*

Family: Zingiberaceae

Rasa: Katu,

Guna: Laghu, Snigdha

Veerya: Ushna

Vipaka: Madhura

Doshagnata: Kapha Vatahara

Karma: Pachani, Deepani, Rochana, Hridya, Sulaghna, Triptighna

Vyadhi prabhava: Vibandha, Amavatha, Sopha, Swasa, Sula, Chardi

16. PIPPALI^[19]

Latin name: *Piper longum*

Family: Piperaceae

Rasa: Katu

Guna: Laghu, Snigdha,

Veerya: Anushnasheeta

Vipaka: Madhura

Doshagnata: Kapha vatahara

Karma: Deepana, Pachana, Hridya

Vyadhi prabhava: Kasa, Ajeerna, Jwara, Aruchi, Pandu, Krimi, Gulma

17. MARICHA^[20]

Latin name: *Piper nigrum*

Family: Piperaceae

Rasa: Katu,

Guna: Laghu, Teekshna

Veerya: Ushna

Vipaka: Katu

Doshagnata: Kapha vatahara

Karma: Deepana, Avrishya, Chedana

Vyadhi prabhava: Kasa, Swasa, Sula, Krimi

18. ESWARI MULA^[21]

Latin name: *Aristolochia indica* Linn

Family: Aristolochiaceae

Rasa: Tikta, Katu

Guna: Laghu, Ruksha

Veerya: Ushna

Vipaka: Katu

Doshagnata: Kapha vatashamaka

Karma: Vishaghana, Krimighana, Vranaghna, Jwaraghna,

Kustaghana

Vyadhi prabhava: Luta, Visha, Jwara, graha

19. SARIVA^[22]

Latin name: *Hemidesmus indicus* R. Br

Family: Asclepiadaceae

Rasa: Madhura, Tikta

Guna: Guru, Snigdha

Veerya: Sheeta

Vipaka: Madhura

Doshagnata: Tridosha shamaka

Karma: Jwaraghna, Vishaghna, Shukarakara, Mehaghna, Kustaghna

Vyadhi prabhava: Jwara, Aruchi, Visha roga, Atisara, Swasa

20. ARKA^[23]

Latin name: *Calotropis procera* R. Br

Family: Asclepiadaceae

Rasa: Tikta

Guna: Laghu, Ruksha, Ushna.

Veerya: Ushna

Vipaka: Katu

Doshagnata: Kapha vatahara

Karma: Kustaghna, Vishaghna, Arshoghna, Sangrahi

Vyadhi prabhava: Kusta, Visha, Pleeha, Vrana, Gulma, Arsha, Udara

METHOD OF PREPARATION

1) Powdering of ingredients

Haratala, Manashila, Hingula, Tankana, Tuttha, Sphatika, Gandhaka, Hingu, Saindhava lavana, Trikatu, Eswari mula and Sariva, Bakula beeja should be powdered separately. Fresh Kattuchanaka should be dried and kept.

Some of the drugs used in this formulation are toxic in nature. There is a controversy of purification procedures in vishachikitsa. These herbs and minerals by its natural

toxicity can counteract and nullify the poisonous effects of animal poisons.

2) Mixing of ingredients

First *Vanga* is melted and *Rasa* is added to it. When it gets cooled by itself, it should be powdered. Then *Gandhaka* should be added and mixed properly till it becomes black in colour. To it, *Haratala*, *Manashila*, *Hingula*, *Tutta*, *Tankana*, *Sphatika*, *Kattuchanaka*, *Hingu*, *Saindhava lavana*, *Vacha*, *Vyosha*, *Eshwara mula*, *Sariva* and *Bakula beeja* should be added separately and mixed. This mixture should be given *bhavana*(trituration) with *Arka ksheera* for 11/2 days(36 hours).

3) Preparation of gulika

This mixture should be made into *gulikas*(pills) of *Badara beeja pramana*(equal to weight of seed of *Ziziphus jejoba*) and dried under shade.

The size of *Badara* fruit and seed may vary from place to place. The *gulika* which was prepared to a size of locally available *Badara beeja* weighed 2gm.^[24]

DOSAGE AND ANUPANA

In case of envenomation, one *gulika* along with cow's milk is given. If the patient vomits this medicine, second *gulika* is administered with milk. A third *gulika* should be given, if the patient vomits the second dose. If the third one is also vomited, the case should be considered as *asadhya*.(incurable).^[4]

DISCUSSION

Jeevaraksha gulika is a herbomineral preparation having 20 ingredients. Among these ten of them are minerals which are highly potent. In *Agadatantra*, still there exist a controversy regarding the *shodhana* (purification) of mineral drugs whether should be done or not. It can be considered that the mineral drugs by its toxic nature act against snake venom as it is said as *sthavara visha*(natural poisons)counter act *jangama visha*(animal poisons).

In this formulation, herbs and minerals which are two different entities are mixed or combined with unique *Ayurveda kalpanas* (procedures). In this procedure of *bhavana*, it is such that the natural properties of these herbs and minerals characteristically enhance the action of this formulation. It further augments the potency of the medicine.

Most of these drugs are having *katu tikta*(pungent and bitter taste); *ushna veerya* (hot potency), *katu vipaka*; *vishaghna* (antipoisonous)action. The combination of herbal and mineral drugs in the preparation along with *bhavana* with *Arka ksheera* makes it a highly potent medicine capable of fighting against the complications of venom.

It is more useful in Cobra bite cases when compared with others. As this formulation is indicated in emergency management of *Sarpa visha*, it can pacify the signs and symptoms produced immediately after the bite which is not found in other snake bites.

CONCLUSION

Kerala has got a rich source of traditional background in management of *sarpa visha*. A wide variety of herbomineral preparations are practiced among *visha vaidyas* which are highly potent. *Jeevaraksha gulika* is one among them which is capable of managing the complications produced by venom. This *yoga* is being used by traditional practitioners for many years and has found good efficacy in the emergency management of snake bites. *Ayurveda* has got effective medicines in the emergency management of *sarpa visha*.

RESEARCH UPDATES

➤ Dr. Shiju P.S – A clinical study to evaluate the efficacy of *Jeevaraksha gulika* in the emergency management of *Sarpa visha*, Govt. Ayurveda College, Trivandrum, Kerala, 2008.

(RESULT: *Jeevaraksha gulika* is capable of counter acting the immediate consequences of envenomation and helps in the resuscitation of patients by reducing the heaviness of head, head ache, excess sweating, burning sensation).

➤ Dr. Sreevanitha Venkat – Efficacy of *Jeevaraksha gulika* in the management of Cobra venom injected Albino rats, SDM College of Ayurveda, Hassan, Karnataka, 2015.

(RESULT: Observed complete protection against sub lethal dose of cobra venom by *Jeevaraksha gulika* and moderate protection and survival period prolongation against lethal dose of venom by it).

ACKNOWLEDGEMENT

1. Dr. Arathi Rajesh, Associate Professor, Department of Agadatantra, MVRAMC, Parassinikkadavu, Kannur, Kerala.
2. Dr. Ashish Paul Thomas, Assistant Professor, Department of Agadatantra, MVRAMC, Parassinikkadavu, Kannur, Kerala.

REFERENCES

1. Gold, Barry S; Richard C Dart; Robert A Barish, "Bites of venomous snakes. The New England Journal of Medicine, 5: 347, ISSN 0028-4793
2. Winkel Ken et.al, " The Global Burden of Snake bite: A Literature Analysis and Modelling Based On Regional Estimates of Envenoming and Deaths", (11) pg.5, PMC 2577696
3. Russell, F.E. " When a snake strikes", Emerg Med, (12): 22.
4. Kochunni thamburan, Prayoga samuchaya, Putezhath Ramamenon, First edition, Thrissur, Sulabha books, 1999; 135.

5. Kaiyyadeva Nighantu, edited by P V Sharma, Varanasi,Chaukhambha publications, first edition, 1979; 277.
6. Acharya Narahari, Raja Nighantu, edited by Dr. Indradeva Tripadi, Chaukhambha publications, third edition, 2003; 450.
7. Kaiyyadeva Nighantu, edited by P V Sharma, Varanasi,Chaukhambha publications, first edition, 1979; 284.
8. Kaiyyadeva Nighantu, edited by P V Sharma, Varanasi,Chaukhambha publications, first edition, 1979; 280.
9. Kaiyyadeva Nighantu, edited by P V Sharma, Varanasi,Chaukhambha publications, first edition, 1979; 283.
10. Acharya Narahari, Raja Nighantu, edited by Dr. Indradeva Tripadi, Chaukhambha publications, third edition, 2003; 183.
11. Acharya Narahari, Raja Nighantu, edited by Dr. Indradeva Tripadi, Chaukhambha publications, third edition, 2003; 448.
12. Acharya Narahari, Raja Nighantu, edited by Dr. Indradeva Tripadi, Chaukhambha publications, third edition, 2003; 469.
13. Kaiyyadeva Nighantu, edited by P V Sharma, Varanasi,Chaukhambha publications, first edition, 1979; p:279
14. Kaiyyadeva Nighantu, edited by P V Sharma, Varanasi,Chaukhambha publications, first edition, 1979; p:223
15. Kaiyyadeva Nighantu, edited by P V Sharma, Varanasi,Chaukhambha publications, first edition, 1979; p:290
16. Kaiyyadeva Nighantu, edited by P V Sharma, Varanasi,Chaukhambha publications, first edition, 1979; p:625
17. Kaiyyadeva Nighantu, edited by P V Sharma, Varanasi,Chaukhambha publications, first edition, 1979; p:224
18. Kaiyyadeva Nighantu, edited by P V Sharma, Varanasi,Chaukhambha publications, first edition, 1979; p:213
19. Kaiyyadeva Nighantu, edited by P V Sharma, Varanasi,Chaukhambha publications, first edition, 1979; p:215
20. Kaiyyadeva Nighantu, edited by P V Sharma, Varanasi,Chaukhambha publications, first edition, 1979; p:214
21. Kaiyyadeva Nighantu, edited by P V Sharma, Varanasi,Chaukhambha publications, first edition, 1979; p:143
22. Kaiyyadeva Nighantu, edited by P V Sharma, Varanasi,Chaukhambha publications, first edition, 1979; p:183
23. Kaiyyadeva Nighantu, edited by P V Sharma, Varanasi,Chaukhambha publications, first edition, 1979; p:630
24. Dr. Shiju P.S – A clinical study to evaluate the efficacy of Jeevaraksha gulika in the emergency management of Sarpa visha, Govt. Ayurveda College, Trivandrum, Kerala, 2008.