



Review Article

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A critical review on Keeta Visha: An ayurvedic concept

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ABSTRACT

Ayurveda is an ancient Indian system of medicine having eight important branches. Agadtantra is among one of them which deals with toxicological conditions and their management. Acharya Susruta in Kalpa Sthana of Susruta Samhita, and Acharya Vagbhata in Uttarantra of Ashtanga Hridaya, moreover in other classics and regional texts have recited concerning the origin of Visha and Keeta Visha. Insects are the largest groups of animals, which constitute 75% of all living animal only 2% of the insect species are horrible to human. There are several types of Keeta Visha described. Among animal poisoning, Acharya's have described different creatures (Sarpa, Keeta, and Luta) responsible for life threatening conditions. The importance of Keeta Visha is more because it causes severe manifestations in the human being, even death also. Acharya Susruta described Keeta Visha under Jangama Visha (Animate poison) and elucidated 67 different type of Keeta under mainly 4 groups. According to its variety, diagnosis and treatment of Keeta Visha is found to be very difficult because these varieties are not yet properly identified and besides, regional variations of these Keetas expresses very differently.

Keywords: Ayurveda, Visha, Keeta visha, Animate Poison.

INTRODUCTION

Keetas in Samhitas

According to Acharya Charka, insects are also called keetas because they are produced from the Keetas or waste products like stool and urine of the snakes^[1]. According to Vachaspathya, it is defined that 'Krimibhyah Sthoole Kshudra jantu Bhede' i.e., Keeta is a variety of Krimi with macroscopic body. Krimis are animate things, which use their individual legs independently for movements. Acharya Susruta has described Keeta in his treatise after the chapters on snakes (Sarpa danshta visha vigyaniya) and rodents (Mooshika kalpa). According to definitions, these may or may not be seen with naked eye. Therefore, they can even be interpreted as insects, worms and even microbes. The Pada may be legs, flagella or cilia; it can even be a part of single cell itself. When considering unicellular animals; here the character of shifting with respect to place is making them to be included under Jangama since Jangama included under live beings (Chetana Dravya); Acharyas may know that this minute entities also can be included under living. Keetas are generally accepted as type of Krimi, which can be visualized by naked eye (Sthoola)^[2].

The term Keeta refer to all living creatures which are small in size but visible, having two or more legs, with or without wings, some living in soil, some moving in air, some in crevices of buildings, roofs, walls etc, some on trees, possessing different shapes, color, some crawl, some fly, some sting some scratch the skin with their claw, and some urinate on the body of man and thus inflict assaults in many other ways. It has not been possible to identify the entire insect mentioned in the above verses^[3].

AIM AND OBJECTIVES

- To study about types of Keetas described in our Ayurvedic texts.
- To evaluate and discuss about Keeta visha their sign, symptom, effect on body & treatment.

MATERIAL AND METHOD

The study on Keeta visha and their effect on our body was done with the help of our Ayurvedic text books especially Susruta Samhita & conceptual and summarised data of different text books.

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HISTORICAL REVIEW [4]

A) Samhita Kala

1. Charak Samhita- Acharya Charaka has given equal importance to visha like the other disease, which is justified by the inclusion of one separate chapter for explaining the symptoms and treatment of various visha conditions in 23rd chapter of chikitsa sthan, Acharya Charaka has explained in detail about the utpatti, guna, vega, and vega lakshana and treatment of visha. The origin, classification, symptoms, and treatment of different keeta visha have also been explained in detail here.
2. Susruta Samhita- Though Susruta Samhita mainly deal with surgery, Acharya Susruta has shown his mastery in other topic like visha too. He has devoted one full section of 8 chapters for this particular branch of toxicology and named it as the 'Kalpa Sthana'. A detailed description of keeta visha, along with its classification, Symptoms and treatment is available in the 8th chapter of Kalpa Sthana in this prime classic.
3. Bhel Samhita – In the present text available, the 18th chapter in Sutra Sthana deal with the anna rakhsa adhyaya and here we get reference for visha dushta condition like anna, vastra or aavarana etc. Anyhow no chapter regarding jangama visha is available.
4. Kashyapa Samhita – In all the text we get the reference of kashyapa as an introducer of several agadas like Dashanga agada, Narkesadi dhoopana etc used in several condition of jangama visha. But in the actual kashyapa samhita available, no portion deals directly with jangama visha. Any how we get the reference stating that the kashyapa mentioned in Agadatantra is different from the author of 'vridha jeevaka tantra.'

B) Sangraha Kala

Sangraha kala is considered as the golden period of Indian medicine. Important works in this period are Ashtanga sangraha and Ashtanga hridayam. Vriddha vagbhata has compiled the detailed description of keeta visha from Charaka and Susruta Samhita and systematically formatted the concepts in separate chapters. A detailed description regarding the symptoms and treatment of various keeta dansha is available in the 37th Chapter of utara sthana in Astanga hridaya. More or less similar descriptions are available in the 43rd chapter.

ORIGIN OF KEETA

Keeta are born from the putrefied urine, feces, semen, egg, and cadaver of snakes.² According to Acharya Susruta the origin of Keeta is said to be from Sarpa, they are described in the continuity. Their formation is alleged as putrefaction of 'Shukra-Vid-Mutra-Pooti-Und-Sambhava'. Accordingly, Keeta are of four types and according to their Prakruti and the symptoms they produce, they are called as Vayavya, Aagneya, Saumya and Sankirna (Sarva-Dosha). Overall, the Keeta are 67 in numbers. Since they are of incalculable types and their habitat is open with the humans, it causes repeated stinging cases, and anaphylactic reactions too, in a few people [5, 6].

CLASSIFICATION OF KEETA AS PER THE DOSHA

According to Acharya Charka [7]

1. Dushivisha Keeta
2. Pranhara Keeta

According to Acharya Vagbhata [8]

1. Vayavya
2. Aagneya
3. Saumya
4. Sankirna

According to Acharya Susruta [9]

1. Vataja
2. Pittaja
3. Kaphaja
4. Sannipataja

Types of Keeta

1. Vataja – 18,
2. Pittaja – 24,
3. Kaphaja – 13,
4. Sannipataja - 12

Most of the insects or Keeta are neurotoxic in nature. Some are vasculotoxic and some causes allergies. Spiders are more vasculotoxic and causes severe inflammatory reactions. Hence it is said to cause Pitta-Kaphaja Vikaras. Scorpions are more neurotoxic and cause severe neurological reactions, hence it is said to be Vata Kapha. Likewise their poisonous effects are stated in detail. Other insects cause mild poisonous reactions. They are practically, mild form of neurotoxic, vasculotoxic and allergic [10].

Table 1: According to Acharya Vriddha Vagbhata, The Four type of Keeta (Insects) are as Follows [11]

VAYAVYA	AAGNEYA	SAUMYA	SANKIRNA
Kumbhinas	Kaundinyak	Visvhvambhar	Tungnasa
Tundikeri	Kanabhak	Panchashuska	Chipilak
Shringi	Varati	Panchakrishna	Talak
Satakulirak	Patravrisca	Kokil	Vahak
Ucchitiang	Vinasika	Sthaireyak	Kosthagari
Agninaama	Brahmnika	Prachalak	Krimikar
Chichiting	Bindul	Vatabh	Mandalapuchchak
Mayurak	Bhramar	Kitibh	Tundanabha
Ahij	Brahyaki	Jati	Sarshapak
Urabhak	Pichchit	Suchimukh	Madguli
Aavart	Kumbhi	Krishnagodha	Sambuk
Sarika	Varchkeeta	Kashayavasik	Agnikeet
Mukhavaidla	Arimedaka	Abhra	
Saraavakurda	Dundubhik		
Parush	Padyakeeta		
Chitrashirsh	Makar		
Jarak	Shatapadak		
Raktaraji	Panchal		
	Pakamatsya		
	Sukshmatund		
	Gardabhi		
	Kleeta		
	Krimisarari		
	Utklesak		

Table 2: According to Acharya Susruta the Following Keeta (Insects) are Mentioned according to Dosha Predominance [12, 13]

VATAJ	PITTAJ	KAPHAJ	SANNIPATAJ
Kumbhinas	Kaundinyak	Visvhvambhar	Tunginasa
Tundikeri	Kanabhak	Panchashukl	Vichilak
Shringi	Varati	Panchakrishna	Talak
Satakulirak	Patravrisca	Kokil	Vahak
Ucchitiang	Vinasika	Saireyak	Kosthagari
Agni naama	Brahmnika	Prachalak	Krimikar
Chichiting	Bindul	Valabh	Mandalapuchchak
Mayurika	Bhramar	Kitibh	Tundanabh
Abhiraji	Bahyaki	Suchimukh	Sarshapik
Urabhra	Pichchita	Krishnagodha	Valguli
Aavartak	Kumbhi	Kashayavasik	Sambhuk
Sarika	Varchkeeta	Gardhbhak	Agnikeet
Mukhavaidal	Arimedaka	Trotak	
Saraavakurda	Padmakeeta		
Parush	Dundubhik		
Chitrashirshak	Makar		
Shatabaahu	Shatapadak		
Raktaraji	Panchalak		
	Pakamatsya		
	Krishnatund		
	Gardabhi		
	Kleeta		
	Krimisarari		
	Utklesak		

Other Keeta (Insects) Mentioned In Susruta Samhita Are [14, 15]

1. Kanabha (Wasp) – 4- Trikanta, Karini, Hastikaksha, Aparajita.
2. Godherak (Garden lizard) – 5-Pinganash, Bahuloma, Mahashira, Nirupam.
3. Masaka (Mosquito) – 5-Samudra, Parimandala, Hastimashaka, Kishna, Parvatiya.
4. Pipilika (Ant) – 6- Sthulashirsha, Samvahika, Brahmanika, Angulika, Kapila, Chitravarnas.
5. Makshik (Bee)– 6- Kantarika, Krishna, Pingala, Madhulika, Kashayi, Sthalika.
6. Galgolika (House lizard)- 7-Shweta, Krishna, Raktaraji, Raktamandala, Sarvasweta, Sarsapika.
7. Shatapadi (Centipede) – 8-Parusha, Krishna, Chitra, Kapila, Pitika, Rakta, Shweta, Agniprabha.
8. Manduk (Frog) – 8-Krishn, Shar, Kuhak, Harit, Rakta, Yavvarnabha, Bhrikuti, Kotika.
9. Visvambhara (Scorpion like creature) -1
10. Ahinduka (A kind of flying insect) - 1
11. Kandumaka (A kind of flying insect) - 1
12. Sukvrinta (A kind of flying insect) – 1
13. Vrischika (Scorpion) – 30

Table 3: Table Showing Keeta (Insects) Described in Various Ayurvedic Texts in Keeta Visha Prakarana [16]

Name of insect	Charak Samhita	Susruta Samhita	Astangsamgrah	Astangahridayam
Luta	+	+	+	+
Mushik	+	+	+	+
Krkalasak	+	-	+	-
Vrischik	+	+	+	+
Kanabha	+	+	+	+
Uchchiting	+	-	+	+
Manduk	+	+	+	-
Matsya	+	-	+	-
Jalauka	+	-	+	-
Grhagodhik	+	+	+	-
Satapadi	+	+	+	-
Masaka	+	+	+	-
Makshik	+	+	+	-
Pipilika	-	+	+	-
Godheraka	-	+	-	-
Visvambhara	-	+	+	-
Ahinduka	-	+	-	-
Kandumaka	-	+	-	-
Sukvrinta	-	+	-	-
Trikantak	-	-	+	-

According to Kriyakoumudi [17]

Some more types of Keeta are mentioned they are as follows:-

Brahmnik (Arana)

Teratta

Tottarotti

Njandu (crab)

Vettalan Karimbada

Koora (Americana periplanata)

Incurable Keeta [18]

According to Sushruta, the following Keeta's bite is incurable:-

Godheraka, Sthalika, Shweta, Agniprabha, Bhrikuti, Kotika,

SYMPTOMS OF BITES OF VISHA KEETA IN GENERAL

According to Acharya Charka insects belonging to mild chronic (Dooshi Visha) category cause red, white, black or brownish black coloration of the part of the body. In the bitten area, and the area becomes covered with rashes. The patient suffers from itching and burning sensation, erysipelas, suppuration and sloughing. The bite of the insects belonging to the fatal (Pranahara) category produces expanding edema, as it happens in snake bite, which is associated with strong odor and bleeding. The patient suffers from pain, heaviness of the eyes, fainting and dyspnoea. The patient afflicted with bite of insects causing chronic poisoning (Dooshi Visha) suffers from intense thirst and anorexia [19].

According to Acharya Sushruta the poisonous Keeta cause Jwara, Angamarda, Romanch, Chhardi, Atisara, Trishna, Daha, Murchha,

Jrimbha, Kampanna, Swasa, Hikka, Atisheeta, Shopha, Mandala, Dadru, Karnika, Visarpa, Kitibha etc [20].

Acharya Vagbhatta said that in all types of Keeta Damsha Karnika, Sopha, Jwara, Kandu and Arochaka will be prominent [21].

KEETA VISHA - DOSHA RELATIONSHIP

Poison of insects (Keeta) has predominance of Vata –Pitta that of wasp and mouse has predominance of Kapha that of scorpion and centipede probably has predominance of Vata. Insects (Keeta) are of four kinds depending upon the Dosha predominance, three with the features of individual doshas and the fourth one is with the features of all of them together. When bitten by insects (Keeta) with the predominance of Vayu (Vata) pricking and pain are greatly increased; when bitten by Pitta predominant insects, there is less of exudation, but more of burning sensation, redness, spreading and appears like a ripe fruit of coffee (Peelu) or Kharjoora (Phoenix dactilifera); when bitten by Kapha predominant insects, there is mild pain and the swelling appears like a ripe fruit of Udumbara (Ficus glomerata). When bitten by those of all the doshas, there is copious exudation, presence of all the symptoms and such cases are to be rejected [22].

In Vatika Visha heart pain, pain in joints and bones, tremors, dyspnea, colour of the skin becomes black, and stiffness like symptoms occur. In Paittika Visha heart burn, loss of sensation, bitterness of mouth, muscle fatigue, tenderness of tissues following red and yellow colour like symptoms are prominent. The symptoms prominent in Kaphaja Visha are Vamana, Arochaka, Peanus, coldness, sweetness of mouth, salivation etc [23].

PRINCIPLE OF KEETA DANSHA TREATMENT

Vitiation of Doshas is to be understood from the symptoms present and treatment should be with drugs that have opposing properties of the Doshas deranged [24].

TREATMENT OF KEETA VISHA ACCORDING TO DOSHA

1. In case of poison predominant with Vata, application of Tila (sesamum seeds) on the site, anointing with oil, fomentation either by steam pipe or ball of cooked rice and nourishing foods are the treatments ideally suited.
2. Poison predominant with Pitta should be controlled with cold irrigation and cold potency topical applications.
3. Poison predominant with Kapha should be treated with scraping, incising fomentation and administration of emetics [25]. The person who is bitten by the Visha Keeta, after doing Sansodhana, application of lepa of the bark of Kshiri vrikshas (Vata, Pippal, Gullara, Pakkar, Paras Pippal) should be preferred for treatment of poisoning. It is claimed all types of inflammation, burning sensation, pain, fever, will be subsides with the application of Pearl [26].

SOME EXAMPLES OF COMPOSITION OF INSECT VENOM

Insect venom is really complicated. Insect have hugely complex mixture of all sorts of compounds – proteins, peptides, enzymes, and other smaller molecules –include into a small amount of venom. The range of compounds is far too vast to detail every single one – but we have tried to examine some of the major constituents in Makshik (Bee), Kanabha

(wasp), Masaka (mosquito), piplika (Ant), Galgolika (House lizard), and Shatapadi (Centipede), Vrischika (Scorpion) venom. When the Makshik (bee) stings the venom is mixed with water, so the actual composition of the substance it insect into the person is around 88% water and 12% venom. The main toxic component of bee venom, apitoxin is melittin it breaks up cell membranes, resulting in the cell destruction of cells. Phospholipase –A this enzyme destroys phospholipids and also breaks down the membranes of blood cells, resulting in the cell destruction. Hyaluronidase, aids the action of the venom by catalyzing the breakdown of protein-polysaccharide complexes in tissue, allowing the venom to penetrate further into the flesh. Histamine forms allergic response, and can cause itchiness and inflammation. Hornet venoms contain particularly high levels of acetylcholine. The bite of mosquito do the hypersensitivity reaction cause by the non toxic allergic protein contain in the mosquito saliva. The scorpion venom is constituted by mucopolysaccharide, hyaluronidase, phospholipase, serotonin, histamine, enzyme inhibitors, and protein namely neurotoxin peptide. The main content of Ants venom is formic acid. The complex venom of Lizard contains serotonin, arginine esterase, hyaluronidase, phospholipase –A₂ & Neurotoxin components or coagulopathic enzymes [27].

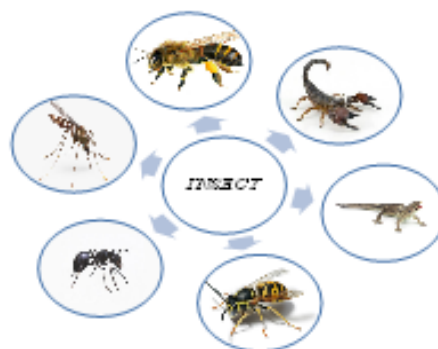


Figure 1: Some Insect

CONCLUSION

By studying above it by our ancient Acharyas that spider, scorpion, mosquitoes, flies, fleas, ants, lizards etc are included under Keetas. Their poisons cause more severe manifestations in human beings. The treatment is also more important. Besides this, several small creatures seen in our surroundings, called Keetas, cause certain poisonous illness to human beings. Their number and name not fully identified. But our Acharyas, though their text book's reveals that they have already nomenclature, the names, type, dosha in various Keetas and their treatment according to dosha. Hence the Keeta observation by the Acharyas can help us to manage the diagnosis and treatment of Keetas bite through this article we tied to compile the various types of Keetas their classification and treatment, and features to identify the various Keetas.

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