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Review Article

### AYURVEDIC ASPECT OF RAT BITE AND ITS MANAGEMENT-A REVIEW

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#### ABSTRACT

In *Ayurvedic* texts rat bite is described as *mooshikaa visha*. Eighteen types of rats, signs and symptoms of their bite and its treatment is described by *Sushrutaacharya* and *Vaagbhataacharya*. There are five modes of spread of *mooshika* (rat) poison. Semen, faeces, urine, scratches by nails and bites with teeth of rat are poisonous. The description of rat bite fever and leptospirosis shows that both are having similarity with *mooshika* poisoning described in ayurvedic texts. In case of *mooshika* bite, bite site should be cauterized and blood letting should be done. After this various drugs paste should be applied on bite site. Various putrificatory therapies should be given e.g. *vamana* (Vomiting), *virechana* (Purgation), *nasya* (Nasal medication), *anjana* (Collyrium) etc. Various drug preparations like medicated ghee, decoctions, paste of drugs, juice of drugs are described. Ayurvedic treatment of *mooshika* poisoning can be given in all diseases where source of infection is rat.

**Keywords:** *Mooshikaa visha*, Rat bite fever, Leptospirosis.

#### INTRODUCTION

*Agadtantra* is one of the eight branches of *ayurveda* which describes animate and inanimate poisons and its management in detail.<sup>1</sup> In *Ayurvedic* texts rat bite is described as *mooshikaa visha*.<sup>2</sup> *Brihatrayee* describes its signs and symptoms, types, incurable features and treatment in detail. Eighteen types of *mooshikas* (rats), signs and symptoms of their bite and its treatment is described by *Sushrutaacharya* and *Vaagbhataacharya*. *Laalan*, *Putraka*, *Krishna*, *Hansira*, *Chikkira*, *Chuchundra*, *Alasa*, *Kashaayadanta*, *Kulinga*, *Ajita*, *Chapala*, *Kapila*, *Kokila*, *Aruna*, *Mahakrishna*, *Mahashweta*, *Mahakapila*, *Kapota* are the eighteen types of *mooshika* (rat).<sup>3</sup> There are five modes of spread of *mooshika* (rat) poison. Semen, faeces, urine, scratches by nails and bites with teeth of rat are poisonous. *Mooshika* (rat) semen is most poisonous. Contact with semen of *mooshika* (rat) directly or indirectly (Substance contaminated with semen of rat) can cause poisoning.<sup>4</sup>

#### Symptoms of *mooshika* (rat) bite:

Vitiation of blood, pallor, lumps, swelling, rashes and reddish patches on skin, giddiness, loss of taste, fever with rigors, severe pain, debility, shivering, arthralgia, horripilation, exudations, fainting of long duration and repeated vomiting of large quantity of mucoid material appearing like young ones of rat.<sup>5</sup>

#### Incurable signs:

Fainting, oedema all over body, discolouration of skin, exudation, loss of hearing, fever, heaviness of head, excess of salivation, haematemesis, retention of urine, discolouration of lips, body covered with small nodules resembling rat, body emitting smell of rat.<sup>6</sup>

#### Treatment of *mooshika* (rat) bite:

1. Cauterization of bite site and blood letting from bite site should be done.<sup>7</sup>
2. Drugs for local application after cauterization and blood letting-
  - a) Paste of shireesh (*Albizia lebbek*), haridra (*Curcuma longa*), kushtha (*Aussurea lappa*), keshar (*Crocus sativus*), guduchi (*Tinospora cordifolia*) should be applied on bite site.<sup>7</sup>
  - b) Paste of trivrutta (*Operculina turpethum*), shweta aparajita (*Clitoria ternate*), root of bilva (*Aegle marmelos*), and guduchi (*Tinospora cordifolia*) should be applied on bite site.<sup>8</sup>
3. *Vamana* (Vomiting)-  
Paste prepared by macerating roots of shireesh (*Albizia lebbek*), katutumbi (*Langenaria vulgaris*), fruit of madana (*Randia spinosa*), and devadali (*Luffa echinata*) along with curd and consumed to induce vomiting. This is useful in all types of rat bite.<sup>9</sup>
4. *Virechana* (Purgation)-

For purgation use the paste of trivrutta (*Operculina terpeethum*), danti (*Baliospermum montanum*), and triphala (*Terminalia chebula*, *Terminalia bellerica*, *Emblia officinalis*)<sup>10</sup>.

5. *Nasya* (Nasal medication)-

Fruits of shireesh (*Albizia lebbek*) are used for preparing drugs for nasal administration.<sup>10</sup>

6. *Anjana* (Collyrium)-

Juice of cow dung mixed with trikatu (*Zingiber officinale*, *piper nigrum* and *piper longum*) may be used for making preparations for collyrium.<sup>11</sup>

7. Drugs useful in *mooshika* (rat) bite-

a) In case of *mooshika* (rat) bite when there is fever decoction of following drugs should be given.

Kiratatikata (*Swetia chiraita*), amruta (*Tinospora cordifolia*), manjishtha (*Rubia cordifolia*), arjuntwaka (*Terminalia arjuna*), palash (*Butea frondosa*), kashmarya (*Gmelia arborea*), kshirvidari (*Ipomoea digitata*), tanduliaka (*Amaranthus spinosus*), mushakarni (*Merremia emarginata*), mahanimba (*Murrya koenigii*), saptaparni (*Alstonia scholaris*), madhulika (*Marsdenia tenacissima*), kapittha (*Limonia acidissima*), rajvruksha (*Casia fistula*).<sup>12</sup>

b) *Nileekaranjaadi Kashaaya* (Decoction)-

This decoction has been found to be highly effective in rat bite and hence it is quite famous among learned physicians.

Equal amounts of root of nilee (*Indigofera tinctoria*), bark of karanja (*Pongamia pinnata*), bark of pichumanda (*Azadirachta indica*), bark of shireesh (*Albizia lebbek*), bark of shigru (*Moringa oleifera*), Rizome of musta (*Cyperus rotendous*), rhizome of ugraa (*Acorus calamus*), Rhizome of

vishwa (*Zingiber officinale*), deodar (*Cedrus deodar*) are used to prepare decoction.<sup>13</sup>

c) Kapitha juice (*Limonia acidissima*) and juice of cow dung along with honey should be given.<sup>14</sup>

d) Paste of ativishaa (*Aconitum heterophyllum*) along with honey is useful.<sup>14</sup>

e) Tanduliyaka ghee (*Amaranthus spinosus*) is effective in rat bite.<sup>14</sup>

f) Root of saariva (*Hemidesmus indicus*), and root, fruit, leaves, flower and bark of kapittha (*Limonia acidissima*) are used to prepare medicated ghee which is useful in rat bite.<sup>14</sup>

g) Powder of sharapunkha (*Tephrosia purpurea*) seeds along with buttermilk is useful.<sup>15</sup>

h) Root of ankota (*alangium salvifolium*) macerated with goats urine used in the form of drink and external application on bite site.<sup>15</sup>

i) Kaarpasa leaves (*Gossypium arboreum*) triturated in tilataila (*Sesamum indicum*) should be given orally.<sup>16</sup>

j) Decoction of musta (*Cyperus rotendous*), madhuka (*Madhuca indica*) and jeeraka (*Cuminum cyminum*) along with honey is useful.<sup>16</sup>

k) Equal quantity of twaka (*Cinnamomum zeylanicum*) and shunthi (*Zingibare officinale*) with warm water is very useful in rat bite.<sup>17</sup>

**Treatment of poison which is remaining in the body for long time:**

The poison remaining in the body may be aggravated on cloudy days. Due to seasonal changes toxicity may increase. In such cases various putrificatory therapies are used and treatment should be give as per *dooshivisha* treatment<sup>18</sup>.

**Table No.1: Symptoms of eighteen types of rat bite and their treatment.**<sup>19</sup>

Rat type	Symptoms of bite	Treatment
<i>Laalan</i>	Salivation, hiccup, Vomitting.	Tanduliyaka ( <i>Amaranthus spinosus</i> ) paste with honey.
<i>Putraka</i>	White discolouration and weakness of body, appearance of small nodules on body resembling rat.	Paste of shireesh ( <i>Albizia lebbek</i> ) and ingudi ( <i>Balanites aegyptiaca</i> ) with honey.
<i>Krishna</i>	Swelling, haematemesis.	Decoction of shireesh fruit ( <i>Albizia lebbek</i> ) and kushtha ( <i>Saussurea lappa</i> ) with ash of palaash flower ( <i>Butea frondosa</i> ).
<i>Hansira</i>	Aversion to food, yawning and horripilations.	Patient should be made to vomit well by use of drugs and then drink the decoction of <i>aargvadhaadi gana</i> .
<i>Chikkira</i>	Headache, swelling, hiccup, vomiting.	Patient should be made to vomit by dirnking the decoction of jalini ( <i>Langenaria vulgaris</i> ), madana ( <i>Randia spinosa</i> ) and ankota ( <i>Alangium salvifolium</i> ).
<i>Chuchundara</i>	Thirst, vomiting, fever, debility, stiffness of neck, swelling of the back, loss of sense of smell and gastroenteritis.	Decoction of chavya ( <i>Piper cheba</i> ), haritaki ( <i>Terminalia chebula</i> ), shunthi ( <i>Euphorbia nerifolia</i> ), vidanga ( <i>Emblia ribes</i> ), pippali ( <i>Piper longum</i> ), ankota ( <i>Alangium salvifolium</i> ) along with honey.
<i>Alasa</i>	Stiffness of neck, pain at bite site and fever.	<i>Mahaagad</i> with honey and ghee.
<i>Kashayadanta</i>	More sleep, dryness of region of heart, emaciation.	Powder of shireesh bark and fruit ( <i>Albizia lebbek</i> ) with honey.
<i>Kulingaka</i>	Pain and swelling at bite site.	Mudgaparni ( <i>Phaseolus trilobus</i> ), Maashparni ( <i>Teramnus labialis</i> ) and sinduvaara ( <i>Vitex</i>

		<i>negundo</i> ) along with honey.
<i>Ajita</i>	Black discolouration of body, vomiting, fainting.	Paste of paalindee ( <i>Operculina turpethum</i> ), manjishtha ( <i>Rubia cordifolia</i> ) macerated in milky sap of snehi ( <i>Euphorbia nerifolia</i> ) along with honey.
<i>Chapala</i>	Vomiting, fainting and thirst	Powder of triphala ( <i>Terminalia chebula</i> , <i>Terminalia bellerica</i> , <i>Embllica officinalis</i> ), devadaru ( <i>Cedrus deodara</i> ) and jatamansi ( <i>Nordostachys jatamansi</i> ) along with honey.
<i>Kapila</i>	Ulcers with suppuration, fever, development of tumours, thirst.	Shweta aparajita ( <i>Clitoria ternata</i> ), Shweta punarnava ( <i>Boerhavia diffusa</i> ) along with honey.
<i>Kokila</i>	Tumours, high fever, burning sensation.	Ghee prepared from punarnava ( <i>Boerhavia diffusa</i> ) and nilinee ( <i>Indigofera tinctoria</i> ).
<i>Aruna</i>	Causes aggravation of <i>vata</i> dosha and causes development of tumours, discoloured patches with small eruptions and swelling.	Blood letting, putrifactory therapies and medicated ghee prepared by using gunja ( <i>Abrus precatorius</i> ) and Kakmachi ( <i>Solanum nigrum</i> ) is useful.
<i>Mahakrishna</i>	Causes aggravation of <i>pitta</i> dosha and causes development of tumours, discoloured patches with small eruptions and swelling.	Same as <i>aruna</i> type of rat bite.
<i>Mahashweta</i>	Causes aggravation of <i>kapha</i> dosha and causes development of tumours, discoloured patches with small eruptions and swelling.	Same as <i>aruna</i> type of rat bite.
<i>Mahakapila</i>	Causes aggravation of <i>rakta</i> (blood) and causes development of tumours, discoloured patches with small eruptions and swelling.	Same as <i>aruna</i> type of rat bite.
<i>Kapota</i>	Causes aggravation of <i>trido</i> sha and <i>rakta</i> (blood) and causes development of tumours, discoloured patches with small eruptions and swelling.	Same as <i>aruna</i> type of rat bite.

## DISCUSSION

According to modern science rat bite fever is an infectious disease transmitted in the secretions of the mouth or nose or urine of an infected rodent. Rat bite fever can be caused by two different organisms streptobacillus moniliformis and spirillum minus. Most people acquire rat bite fever through contact with urine or oral or conjunctival secretions from an infected animals. This most commonly occurs via a bite, yet some cases may occur simply through contact with these secretion. The source of infection is usually rat. Symptoms of rat bite fever are fever, chills, headache, muscle aches, diffuse rash, large joints are swollen, red and painful.<sup>20</sup>

Leptospirosis is a zoonosis caused by spirochaetes belonging to the genus leptospira and occurs in endemic and epidemic forms. Rodent is the most important reservoir of infection. Leptospira exist in some animal species like rats without producing any disease such animals may shed leptospira in urine for prolonged periods. Symptoms of leptospirosis are fever, severe headache, myalgias, conjunctival haemorrhage, sore throat, maculopapular skin rash. In severe disease symptoms are severe jaundice, acute renal failure, haemorrhagic manifestation include subconjunctival haemorrhage, epistaxis, haemoptysis, ecchymosis and gastrointestinal haemorrhage.<sup>21</sup>

The description of rat bite fever and leptospirosis shows that both are having similarity with *mooshika* poisoning described in ayurvedic texts. Mode of transmission, signs and symptoms

of these diseases are similar to those of the descriptions of mooshika poisoning in ayurvedic texts. The involvement of liver and kidney is evidenced by the presence of symptoms like discolouration and oedema all over body. Myalgia, haematemesis, tenderness, petechial haemorrhages from skin and mucous membrane etc. are common in both diseases.

## CONCLUSION

In ayurvedic texts line of treatment of mooshika bite given in detail. In case of mooshika bite, bite site should be cauterized and blood letting should be done. After this various drugs paste should be applied on bite site. Various putrifactory therapies should be given e.g. *vamana* (vomiting), *virechana* (Purgation), *nasya* (Nasal medication), *anjana* (collyrium) etc. Various drug preparations like medicated ghee, decoctions, paste of drugs, and juice of drugs are described. In Kerala much research and development has been done in the ayurvedic management of animate poisoning. Ayurvedic treatment methods and medicinal recipes for *mooshika* poisoning are still being practiced by *vishavaidyas* (Physician) in kerala. Ayurvedic treatment of *mooshika* poisoning can be given in all diseases where source of infection is rat.

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