

Conceptual study on anti- toxic effect of *Tagaradi agada* in poisonous insect bite

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Abstract

Rapid urbanization has resulted in more regular contact with wild animals and insects, posing health risks. Poisoning from an insect bite may necessitate medical intervention right away. *Tagaradi Agada* is one of the *agadas* listed in *Ashtanga Sangraha Uttartantra Kita Vishapratishedha Adhyaya* for treating harmful insect bites. Shloka phalashruti mentions its special anti-toxic action in *Makshika visha*. This review is for the purpose of providing a comprehensive overview of therapeutic and pharmacological research on this agada for *Makshika visha* poisoning.

Keywords: *Tagaradi Agada*; Makshika Visha; Agada; Insect bite

1. Introduction

The *Ayurvedic* branch of Agada Tantra deals with numerous poisons, which are roughly categorized as *Sthavara Visha* (poisons with both plant and mineral origins) and *Jangama Visha* (poisons which have animal origins). It also identifies numerous components of it, known as *Visha Adhishthana*¹, which cause poisoning in each of them. One of the types of poisoning caused by a bug bite is known as *Jangama Visha* poisoning. One of them is *Makshika Visha* (honeybee sting). Since they have lost most of their habitat owing to deforestation, encounters with honeybees are now regular, and they frequently establish their nests on buildings.

One of the *Agada Kalpas* mentioned in the *Ashtanga Sangraha Uttarsthana Kita Vishapratishedha Adhyaya* is *Tagaradi Agada*². It calls *Makshika Visha Nashanam* by that name. It has *Tagara*, *Shunthi*, *Nagakesara*, and *Maricha* as its 4 herbal components.

2. Material and methods

This article is based on literary review collected from Ayurveda Samhitas, modern texts and various websites.

Method of preparation of *Tagaradi Agada*

All ingredients are taken in same quantity and mixed well.

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Table 1 *Tagara*

Latin Name	Family	Chemical Constituent	Pharmacological Action ³	Pharmacological action according to <i>Ayurveda</i> ⁴
<i>Valeriana wallichii</i> DC	Valerianaceae	Valerenic Acid, Valepotriates	Coronary Dilating and antiarrhythmic effect, Anxiolytic activity, Sedative/Anticonvulsant Activity, gastrointestinal activity	<i>Tagara</i> has <i>Madhura Rasa, Ushna Veerya, Madhura Vipaka, Snigdha and Laghu guna</i> . It has properties like <i>Vishaghna, Shoolaghna, tridosha-shamaka</i> . Therapeutic action: Akshirog

Table 2 *Nagara*

Latin Name	Family	Chemical Constituent	Pharmacological Action ⁵	Pharmacological action according to <i>Ayurveda</i> ⁶
<i>Zingiber officinale</i> Roscoe	Zingiberaceae	Zingeron, gingerdiol, zingibrene, gingerols and shogaols	Antioxidant, Antiemetic, Anti-inflammatory, Analgesic, Cardioprotective, Anticlotting, Antibacterial, Antiviral, Antifungal Antiparasitic	<i>Shunthi</i> has <i>Katu Rasa, Ushna Veerya, Madhura Vipaka, Laghu and snigdha Guna</i> . It has properties like <i>Ruchikara, pachaka, vrishya, swarya, shoolaghna, vamighna, Kapha-Vata shamaka</i> . Therapeutic action: <i>Aamvataghni, Swasahara, Kasahara, hridrog, shlipada, shotha, arsha</i> .

Table 3 *Nagakesara*

Latin Name	Family	Chemical Constituent	Pharmacological Action ⁷	Pharmacological action according to <i>Ayurveda</i> ⁸
<i>Mesua ferrea</i> Linn.	Guttiferae	Coumarins, xanthones, terpenoids, and sterol type of phytochemicals, mesuol, mesuogin	Antioxidant activity, Analgesic activity, Anti-inflammatory action, Anti-venom Activity, Diuretic properties, wound healing activity, Anticonvulsant activity/CNS depressant activity, Immunomodulatory activity.	<i>Nagakesara</i> has <i>Kashaya, tikta rasa, ushna veerya, Katu Vipaka, Laghu and ruksha guna</i> . It has properties like <i>Aampachaka, Kanduhara, trishanashaka, swedanashaka, chhardi-hrillasnashaka, vishaghna, Kapha-Pitta shamaka</i> . Therapeutic action: <i>Kushtha, Visarpa, Jwara</i>

Table 4 *Maricha*

Latin Name	Family	Chemical Constituent	Pharmacological Action ⁹	Pharmacological action according to <i>Ayurveda</i> ¹⁰
<i>Piper nigrum</i> , Linn	Piperaceae	Piperine, piperamine, piperamide, sarmantosine, sarmentine, trichosta	Anti-asthmatic activity, Antioxidant activity, Anti-inflammatory activity, Immunomodulatory activity, Anticonvulsant activity, Analgesic activity	<i>Maricha</i> has <i>Katu Rasa</i> , <i>Ushna veerya</i> , <i>Katu Vipaka</i> , <i>Laghu</i> and <i>tikshna Guna</i> , it has properties like <i>Deepana</i> , <i>shoolahara</i> , <i>Kapha-vata shamaka</i> Therapeutic action: <i>Swasahara</i> , <i>Krimihara</i>

2.1. Poisonous Insects: (*Makshika Visha*)

The well-known members of the Hymenoptera order are bees, wasps, hornets, yellow jackets and pants. This order in fact consists of about 100,000 species of bees, wasps and ants. Many of these species are equipped with stingers and poison glands. Two distinct families exist, the Apidae and the Vespidae. The genus *Apis* contains only the honeybee, while the genus *Polistes* and the genus *Vespula* contain wasp, yellow jacket and hornet. Among the species of Hymenoptera, bees are the most commonly encountered species because of beekeeping activities. Two of the more commonly encountered species of bee are honeybee *Apis mellifera* and the bumblebee (*Bombus* species). While the massive local reaction seems to be brought on by an allergic reaction to venom proteins, the non-allergic local reaction is a toxic response to venom components. Most of these reactions are probably caused by the late-phase reaction mediated by IgE.

Clinical Features: Envenomation from a hymenopteran sting causes a variety of clinical manifestations. (i) local, non-allergic reactions (pain, minor edema, redness at the sting site); (ii) Large local allergic reactions (excessive swelling >10 cm that lasts for more than 24 hours); (iii) Anaphylaxis (generalized urticaria, angioedema, bronchospasm, hypotension, cardiovascular collapse and loss of consciousness); (iv) Systemic toxic reactions (edema, vomiting, diarrhea, headache, seizures and altered sensorium); (v) Unusual reactions (cardiac ischemia, encephalomyelitis and cerebral infarctions)

3. Discussion

Tagaradi agada have 4 herbal ingredients. These drugs contain many pharmacological properties like anti-inflammatory, anti-analgesic, anti-convulsant, cardioprotective, immunomodulatory activity, anti-asthmatic activities. A poisonous insect bite can result in both allergic and non-allergic local symptoms, such as discomfort, mild edema, and redness at the sting site. The combined pharmacological effects of *Tagaradi Agada* treat the majority of symptoms brought on by insect bites that are toxic, making it the favored *Agada* in *Makshika Visha*

4. Conclusion

Tagaradi Agada was specifically cited by *Ashtanga Sangraha* in the *Kita Vishapratisheya adhyaya* for the treatment of *Makshika Visha*. Because of its *vishaghna*, *kandughna*, *shoolahara*, and pharmacological qualities such as anti-inflammatory, anti-analgesic, anticonvulsant, cardioprotective, immunomodulatory activity, and anti-asthmatic activities, this *agada* can be applied topically as well as consumed internally. This article's review aims to provide comprehensive details on *Tagaradi Agada*'s pharmacological and therapeutic uses in *Makshika visha*.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest.

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