



EXPERIMENTAL STUDY OF THE EFFECT OF LANGLYADI LEPA ON HONEYBEE STING

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ABSTRACT

The eight branches of Ayurveda are referred to as Ashtang Ayurveda. Kaya, Bala, Graha, Urdhwanga, Shalya, Drashta, Jara, and Vrushan are among them. Drashta, in this context, refers to the study of poisons. Numerous circumstances, such as biting, consuming improper chemicals, and applying a material paste to the body's surface, can result in poisoning. According to Acharya Sushruta, there are sixteen different kinds of sadansha. One is dispersed by a structure resembling a needle, such as honeybees, scorpions, etc. In rural and Ayurvedic medicine, honey is one of the most widely used substances. There is a possibility of being attacked by honeybees while collecting honey. Honeybees sting the area where they attack. It results in excruciating localised pain and inflammation. Occasionally, it becomes more deadly, and the patient passes away from anaphylactic shock. Lepa karma is one of the 24 poisoning therapy strategies offered by Ayurveda. According to Acharya Sharangadhar, Langlyadi lepa works well for kita visha. Thus, the current study evaluates Langlyadi lepa's effectiveness in honeybee stings in albino mice.

Keywords: Ashtanga, Agada, Honey, sting

INTRODUCTION

One area of research that focuses on preserving health and curing illnesses in the body is Ayurveda.¹ Ayurveda has eight significant branches. Thus, it is referred to as "Ashtang Ayurveda." One Of its eight branches is Agadtantra or Drashtra. It focuses on poison research. Visha is primarily divided into two categories in Ayurveda: Jangama (animate) and Sthavara (inanimate). Animal-derived visha is known as jangama visha. There are also Sthavara visha. Acharya Sushruta has delivered sixteen adhithana. They are Artava (menstruation), Mukha (mouth), Sadansha (sting bite), Nishwas (exhalation), Danstra (biting), Nakha (nails), Mutra (urine), Purisha (stool), Shukra (semen), Lala (saliva), and Tundasthi (bones of an animal killed by toxin).² Out of these sixteen types, the sadansha type toxin is spread by needle structure. Honeybees are an essential insect for humans and have become part of our culture and farming. They are vital for the production of crops because they perform an essential pollination function. Because apiculturists are frequently attacked by bee stings, which often result in anaphylactic shock, it is necessary to find a highly effective and readily available drug. Acharya Sharangadhar has mentioned the local application of Langlyadi lepa to treat keeta visha, so the current study will examine the in vivo use of Langlyadi lepa in Apis Cerana Indica bee sting poisoning in humans.

❖ Aims and objectives:

❖ Aims

To study the efficacy of applying Langlyadi Lepa in Honeybee stings in Albino Mice.

❖ Objectives:

1. To study the toxic effect of honeybee stings on Albino Mice according to Symptoms.
2. To study the efficacy of Langlyadi lepa application according to signs of Honeybee sting on Albino Mice.
3. To study the efficacy of Langlyadi lepa in Honeybee stings in Albino Mice.

❖ Review of literature:

Honeybee sting:³

- Latin name – Apis cerena indica
- Kingdom – Animalia
- Phylum – Anthropod
- Subphylum – Uniramia
- Class – Insects
- Order – Hymenoptera
- Sub order- Appcrista
- Family – Apiae
- Tribe – Apini
- Genus – Apis
- Subspecies – Apis cerena indica

Chemical constituents of Honeybee venom⁴ –

Histamine, Hyaluronidase, Phospholipase A, Phospholipase B, Apamine, Peptide, Mellitin specific protein.

Symptoms caused due to Honeybee sting⁵

- Itching
- Oedema
- Burning sensation
- Pain
- Erythema
- Tenderness

▪ Langlyadi lepa:

The Langlyadi Drugs like Langali, Ativisha, Jalini, and Alabu Mulbeejak are combined to make lepa. They will create the churna after being crushed and ground using 85 mesh. To create kanji, one-part cooked rice and three parts waters were allowed to ferment. With the aid of pastels and a sufficient quantity of dhanyambu paste williform, all the medications are combined in an equal amount, and a paste is created. Lepa had a medium consistency—it wasn't excessively thick or thin.

Sr. No.	Drug	Latin name	Family	Rasa	Veerya	Vipaka	Part used
1	Langali ⁶	Gloriosa superba	Liliaceae	Katu, Tikta	Ushna	Katu	Kanda
2	Ativisha ⁷	Aconitum heterophyllum	Ranunculaceae	Tikta, Katu	Ushna	Katu	Kanda
3	Jalini ⁸	Luffa acutangulata	Cucurbirtaceae	Tikta	Ushna	Katu	Phal, Phul, Pan, beeja
4	Alabu ⁹	Lagenarvu igraris	Cucurbirtaceae	Madhur	Sheeta	Madhura	Phal, beeja
5	Mulbeejak ¹⁰	Raphinuss ativus	Cruciferae	Katu, Tikta	Ushna	Katu	Beeja

Material and Methods:

Langlyadi lepa for local application:

- A quarter of the Anguli should be the thickness of the Doshaghna lepa application.
- A third of the Anguli should be the thickness of the Vishaghna lepa.

- Varnya lepa should be half as thick as Anguli.
- After closely examining the albino mice's weight and age, I administered Langlyadi lepa in a thickness that completely covered the wound and any surrounding inflammation.

Protocol:

Animal Species	Albino Mice
Strain	Swiss Albino
Average weight of Mice	20 – 25 gms
No. Of Mice	6
Age of Mice	6 – 8 weeks
Sex of Mice	50 % males and 50 % females
Period of Acclimatization	7 days
Route of drug administration	Local application of lepa

Method of Experiment:

Mice preparation before the sting operation: Every mouse was ready for the test. Hair removal cream was applied to the back of each mouse to eliminate hair only in the desired location.

1. A colony of foraged bees (two to three weeks old) was chosen for the experiment.
2. Groups of male and female mice were identified by staining them with picric acid, which turns yellow and lasts three to four weeks.
3. Next, six bee stings were administered to each mouse dorsally, with a safe gap between each sting. Before the stings were administered, each location was already indicated.
4. Following stinging, three of each mouse's six stings were extracted from one side, and the remaining three were left in place.
5. Following that, a reaction was noted during the sting operation.

6. Next, Langlyadi lepa (daily fresh prepared) was applied from the mouse tail upwards one after the other after a few minutes (15–20 minutes).
7. All mice were monitored for a full day following the sting procedure to look for any indications of toxicity.
8. For seven days, skin responses and other symptoms were monitored.
9. The Indian Standards BIS (Bureau of Indian Standards) 1992 was used to rate the skin reaction.
10. A test for histopathological observation was conducted.

Assessment:

We can conclude that females were more sensitive to stings because:

- All mice showed tenderness, erythema, scaling, oedema, and wound diameter.

- Females exhibited a severe reaction; few females also displayed eye lacrimation and defecation during stinging, indicating the severity of pain in them and
- Males became restless and irritable after stinging.

▪ **Histopathological observation:**

Following a dermal sting, male and female mice exhibit congestion, vasodilation, and persistent inflammation. There was an edema. The primary infiltrate is monocytic.

DISCUSSION

- Apis cerena indica bees were utilised in this investigation to create venom through a natural bee sting.

- The trial used grades of parameters such as wound diameter, oedema, scaling, tenderness, and erythema, which were authorised by the Indian government's ISI guidelines for skin reactions.
- After stinging, freshly made Langlyadi lepa was applied locally to the wound every day for seven days.
- After seven days, the wound was healed.
- However, the histological investigations revealed vasodilatation, persistent inflammation, and congestion. There was also oedema and infiltration. Monocytic infiltration predominated. Eosinophils rarely existed, and the amount of infiltration was minimal.

Sr. No.	Parameter	Relief
1	Tenderness	88 %
2	Erythema	93 %
3	Scaling	87 %
4	Oedema	100 %
5	Diameter of wound	96

CONCLUSION

- The Sharangadhar Samhita states that Langlyadi lepa works well to ward off honeybee stings.
- Every component of Langlyadi lepa has anti-inflammatory and Vishaghna properties.
- Within seven days, there was a noticeable decrease in honeybee stung signs and symptoms.
- Honeybee stings can be effectively treated with Langlyadi lepa.

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