

Case report

A case study on the effectiveness of *Attai vedal* (leech therapy) for the treatment of *Karappan* (eczema)M. SriSakthiLogisha¹, G. Nivetha², M. Mohamed Mustafa³, T. R. Siddiq Ali³, N. J. Muthukumar⁴, V. Mahalakshmi⁵¹Sirappu Maruthuvam Department, ^{2,4}Department of Varmam Maruthuvam, ⁵Department of Siddhar Yoga Maruthuvam, National Institute of Siddha, Chennai, Tamil Nadu, India³Department of Varmam Maruthuvam, Government Siddha Medical College, Chennai, Tamil Nadu, India

(Received: July 2022

Revised: October 2023

Accepted: October 2023)

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ABSTRACT

There are more than 3000 known common skin diseases. Eczema, generally referred to as *karappan*, is a prevailing dermatological condition often seen in clinical settings. It is not an immediately life-threatening disease; it is a chronic disease that has a physiological and social impact on a patient's life. The skin lesion is manifested externally and visible to all. So, the patient feels detested and has depression. The disease may affect any age, but it is common in school-going age and 1-3 percent of adults. It is characterized by itching followed by redness, erythema, and papules. The papules may turn to vesicles. The condition known as *karappan* in the *Siddha* system of medicine is considered equivalent due to the presence of analogous signs and symptoms. Management of eczema involves emollients, steroids, and topical application therapy given in other systems. It will give temporary remedies even after use, relapse, recurrence and other complications are common. Hence, there is a need for alternative drugs and therapy that has a good efficacy in this debilitating disorder, which is possible through the *Siddha* system of medicine. Leech therapy (*attai vidal*) our *siddhars* have given importance to bloodletting therapy and concede leech is the most unique and effective method of bloodletting even in an infected wound, skin disease, and abscesses. The present case was carried out in the OPD of the department of *Sirappu Maruthuvam*, Government *Siddha* Medical College, Chennai, Tamil Nadu in India. The course of treatment has shown significant improvement in terms of alleviating all of the symptoms and improving the patient's easy score.

Keywords: Leech therapy; *Siddha* medicine; Eczema; EASI Score; *Karappan*.**INTRODUCTION**

The *Siddha* system is one of the most ancient known medical practices, and it illustrates both the treatment of illness and the lifestyle strategy requisite for dwelling a healthy life. According to *Siddha*, the entire world is based on five elements (*Panchabootham*) (1,2). The human body is built by humours (*Uyir Thathukal*) which are the derivatives of five elements (*Panja Bootha Serkai*) (3). The alteration in these humours leads to disease. And these altered humours can be felt by the physician from the *Naadi* which is one of the unquities of the *Siddha* system.

Eczema is an inflammatory skin condition that is not communicable but is marked by itching, redness, scaling, blistering, and oozing (4). Epidermal edema and vesicle development describe this particular kind of allergic cutaneous manifestation of antigen-antibody interaction. Between 15 to 20 percent of children and 1 to 3 percent of adults worldwide suffer from eczema, making it one of the most prevalent dermatological conditions (5). Males and females are equally impacted. There are 1.5 males for every 1.5 females (6).

The most common cause of eczema is allergic or sensitive skin and exposure to irritants. Sometimes it may involve a combination of irritation and poor venous returns (7). The Other predisposing factor is a

family sensitiveness, physical ability, climate and physiological factors. Current treatment eczema is managed with emollients, steroids, topical application etc but these results in relapses, recurrent and other complications on the withdrawal of medications.

According to the *Siddha* system, the symptoms of eczema correlate with *Karappan*. The line of treatment of the *Siddha* system is to balance the humours by a unique technique like vomiting (*Virachanam*), purgative (*Virachanam*), eye drops (*Anjanam*), oil bath and *Pathiyam* (diet restrictions) for balancing humours (*Tiridosam*) (8).

And these altered humours can be corrected by both internal medicines and also by external therapies. Leech is one of the common techniques which were followed in our *Siddha* system for a long time. Recently many studies have been conducted to explore the bioactive molecules of saliva secretion of the leech. With this therapy altered humours can also be recovered to their normal form and eczema can be managed.

Case report

A 56-year-old male patient presented with the complaint of hyperpigmented, vesiculated, and associated with severe itching over the affected area. The patient also complained of oozing from a lesion which is widely spread over the area between the knee to ankle joint, for 5 years approached our OPD in

Department of of Sirappu Maruthuvam of Govt Siddha Medical College, Chennai, and Tamil Nadu. Before five years, the patient had no symptoms. His lower limbs began to itch after that, and eventually both of his forelegs and both of his feet were affected.

In addition to a burning feeling and prickling discomfort, the lesion is quite itchy. Bleeding and crust formation were present after scratching on it. He also mentioned that the lesion and itching aggravate during the winter season and after intake of certain foods. He was under medication of another system of medicine for the past 4 years and Siddha medicine for 1 year which he found to be a relief from the symptoms but symptoms aggravate while withdrawing from the drug.

He was not a known case of diabetes mellitus, systemic hypertension, bronchial asthma, pulmonary

tuberculosis, or any drug allergy. He was a non-smoker, non-alcoholic, and bowel and micturition habits are normal.

Diagnostic assessment

His general condition was stable. His vitals were normal and no abnormalities were seen in his cardiovascular system, respiratory system and abdomen examination.

Routine haematology (CBC, ESR, bleeding time and clotting time) were assessed before the patient underwent this treatment. The patient's haemoglobin, bleeding time and clotting time were checked before treatment to avoid haemorrhagic complications.

The Siddha system has a unique way of examining a patient. *Envagai thervu* (Eightfold system of clinical assessment) is used to assess a patient.

Table 1: Siddha examination -*Envagai thervugal* - eight-fold system of clinical assessment (6)

S.No.	Siddha Investigative Parameters	Findings
1.	<i>Naa thervu</i> –Examination of Tongue <i>Niram</i> (Colour) <i>Thanmai</i> (Character) <i>Pulan</i> (Sence)	Pale Coated Normal
2.	<i>Niram Thervu</i> -Examination of Colour	Hyper pigmented oozing skin lesion on lower limb. Itching all over the body
3.	<i>Mozhi Thervu</i> -Examination of Speech	Normal Speech
4.	<i>Vizhi Thervu</i> -Examination of Eye <i>Niram</i> (Colour) <i>Thanmai</i> (Character) <i>Pulan</i> (Sense)	Normal Normal Normal
5.	<i>Malam Thervu</i> -Examination of Stools <i>Niram</i> (Colour) <i>Nurai</i> (Froth) <i>Elagal/Erugal</i> (Consistency)	Normal Absent <i>Eelagal</i> – Consistency
6.	<i>Moothiram Thervu</i> - Examination of Urine (A) <i>Neer kuri</i> <i>Niram</i> (Colour) <i>Adarathi</i> (Specific gravity) <i>Manam</i> (Odour) <i>Nurai</i> (Froth) <i>Enjal</i> (Deposits) (B) <i>Nei kuri</i>	Pale yellow Thin urine Normal Absent Absent Ring formation- indicates <i>Pitham</i>
7.	<i>Sparisam Thervu</i> -Examination of Skin	Wet /crusted in affected area
8.	<i>Naadi Thervu</i> -Examination of Siddha Pulse	<i>Pitha kabam Naadi</i>

Therapeutic intervention

Table 2: Treatment protocol

S.No	Name of treatment	Name of medicine	Dose and times of medicine	<i>Anubanam</i> (adjuvant)
1	<i>Kazhichal Maruthuvam</i> (Purgation therapy)	<i>Sithathi ennai</i> (9)	10 drops, OD at early morning (Day 1)	Rice water
2	External therapy	Leech therapy (10)	5 episodes with 7 days interval (13)	–

Kazhichal maruthuvam (Purgation therapy)

For the normalization of *Uyir Thathu*, the patient took purgation before the day of treatment (9). On the first day of treatment, the patient is prescribed 10 drops of *Sithathi Ennai* in the early morning on an empty stomach along with rice water (adjuvant). This

procedure was used to balance the altered *Dhodam*. This procedure increases the motility of the intestine and helps to expel all the intestinal content. The patient was moderately purged 8 times. According to the Siddha system, occurrence of eczema is due to

increased *Vadham* by giving purgation *Vadham* can be balanced (9).

The leech therapy procedure was executed in the subsequent phases:

Preoperative procedure

Non-poisonous leeches were identified and brought from the authentic person. Before treatment, the leech washes with normal saline and turmeric water and stored (11).

Operative procedure (Fig. 1)

After cleansing the lesion with water, it is desiccated with gauze. Active leeches were subsequently administered to the lesion area that had been cleansed. Having captured the target, the object raised in an arched position from its neck, resembling a horseshoe, signifies that it is completely absorbing the blood's energy. It was subsequently draped over a damp cotton cloth. It typically detaches from the site within thirty minutes. The patient experienced pain and irritation after swallowing vitiated blood, which could be remedied by applying a few droplets of saline water onto the affected area (11,12).



Fig.1: Operative procedure

Post-operative procedure

Following leech detachment, the lesion was cleansed using *tiripala* wash. Following the application of turmeric powder/*padikaram* (13) to the laceration, a

secure bandage is used to occlude further bleeding. Following the coagulation of blood, *mathan thailam* (14) was bandaged and firmly bound. Conversely, turmeric powder was administered orally in order to induce vomiting of the extracted blood (14). It then swims actively, which is indicative of having properly vomited. It is stored in freshwater. Used leeches were reused for the same patient with every 7 days gap (11, 14).

Therapy was repeated in 5 settings with every 7 days gap (11). The total duration of treatment was 35 days the patient was advised to avoid aggravating food particles (*karapan pandam*) (15) with Eczema.

RESULTS

The features of itching, oozing, dryness, and hyperpigmentation are reduced gradually after the last session of the treatment. The patient was followed up for 8 months and he has shown no signs of recurrence. The improvement was observed using the EASI score.

Before starting treatment, the patient's EASI score was 23.3. After the 2nd episode of leech therapy, it was 21.2 and after the 3rd episode of therapy it was 19.2, after the 4th episode it was 13.6, after the 5th episode it was 10.2, finally, on the 35th day EASI score was 8.6. Redness, thickness, and itching were reduced on the 14th day of treatment. On the 35th day of treatment, there were drastic changes observed in Redness, thickness, itching, and lichenification (Tables 3 to 8; Figs. 2 to 4).

EASI Score – The eczema area severity index has been the gold standard for evaluating severe eczema (10). EASI creates a single score between 0 and 72, where 0 denotes no disease and 72 denotes maximum disease, by combining the evaluation of lesions' severity and the affected. The average redness, thickness, scratching, and lichenification- each ranked from 0 to 4 are used to calculate the EASI, which is then weighted by the area of involvement.

Table 3: EASI Score, assessments carried out 1st day before treatment

Body Region	Redness	Thickness	Scratching	Lichenification	Area Score	Multiplier	Score
Head/Neck	0	0	0	0	0	X 0.1	0
Trunk	1	0	1	0	2	X 0.3	1.2
Upper Extremities	0	0	0	0	0	X0.2	0
Lower Extremities	3	2	3	3	5	X0.4	22
Total EASI score = 22.80							

Table 4: EASI Score, assessments carried out on 7th day of treatment

Body Region	Redness	Thickness	Scratching	Lichenification	Area Score	Multiplier	Score
Head/Neck	0	0	0	0	0	X 0.1	0
Trunk	1	0	1	0	2	X 0.3	1.2
Upper Extremities	0	0	0	0	0	X0.2	0
Lower	2	2	3	3	5	X0.4	20

Extremities							
Total EASI score = 20.80							

Table 5: EASI Score, assessments carried out on 14th day of treatment

Body Region	Redness	Thickness	Scratching	Lichenification	Area score	Multiplier	Score
Head/Neck	0	0	0	0	0	X 0.1	0
Trunk	1	0	1	0	2	X 0.3	1.2
Upper Extremities	0	0	0	0	0	X0.2	0
Lower Extremities	2	2	2	3	5	X0.4	18
Total EASI score = 18.80							

Table 6: EASI Score, assessments carried out on 21st day of treatment

Body Region	Redness	Thickness	Scratching	Lichenification	Area Score	Multiplier	Score
Head/Neck	0	0	0	0	0	X 0.1	0
Trunk	0	0	1	0	2	X 0.3	0.6
Upper Extremities	0	0	0	0	0	X0.2	0
Lower Extremities	2	2	2	2	4	X0.4	12.8
Total EASI score = 13.20							

Table 7: EASI Score, assessments carried out on 28th day of treatment

Body Region	Redness	Thickness	Scratching	Lichenification	Area Score	Multiplier	Score
Head/Neck	0	0	0	0	0	X 0.1	0
Trunk	0	0	1	0	2	X 0.3	0.6
Upper Extremities	0	0	0	0	0	X0.2	0
Lower Extremities	1	2	2	1	4	X0.4	9.6
Total EASI score = 10.00							

Table 8: EASI Score, assessments carried out on 35th day of treatment

Body Region	Redness	Thickness	Scratching	Lichenification	Area Score	Multiplier	Score
Head/Neck	0	0	0	0	0	X 0.1	0
Trunk	0	0	1	0	2	X 0.3	0.6
Upper Extremities	0	0	0	0	0	X0.2	0
Lower Extremities	1	1	2	1	4	X0.4	8
Total EASI score = 10.00							



Fig.2: Before treatment



Fig.3: After treatment

During treatment, the assessment was carried out on the 1st day, the 7th day, the 14th day, the 21st day, the 28th day, and the 35th day. Changes that occurred within the treatment period have been noted on the criteria of assessment parameters (EASI Score). The patient was observed every week of the treatment period and follow-up will be continued.

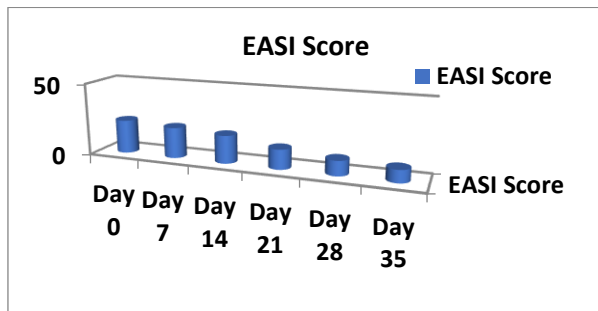


Fig. 4: The EASI Score throughout the treatment

DISCUSSION

Medicinal leech therapy has been known for a long time across various civilizations and recently this therapy was recognized by the modern world as complementary medicine for various ailments.

Recently, many studies have been conducted on leech therapy. In one of the studies, by Ahmed and Anwar, they have mentioned the clinical importance of leech therapy (16). From this study, we can derive the fundamental premise of leech therapy on eczema. The application of leech can reduce vascular congestion because of the presence of carboxypeptidase in its saliva and it also has a peripheral vasodilator effect. Acetylcholine is one of the components present in its saliva which is responsible for vasodilation and endothelial muscle relaxation. This vasodilator effect increases the microcirculation and reduces the inflammatory intermediates like lymphocytes in surrounding vessels. This, in turn, helps in the reduction of itching which is one of the major concerns of patients with eczema.

In another study, the author mentioned the possible mechanism of leech on dermatological problems. In this study, the author mentioned that leech saliva has anti-inflammatory biomolecules like eglins and bdellins. It helps in the reduction of erythema (redness) and oozing which is one of the major complications of eczema. It also promotes granulation tissue formation which indirectly induces collagen formation causing keratolysis. Hence in turn it reduces hyperkeratosis which is the prominent feature of eczema.

CONCLUSION

The use of leeches has been shown to be beneficial in treating eczema and significantly reducing the associated symptoms. The use of leech treatment was proven to be highly useful in this research project in the management of eczema without causing any

undesirable side effects. Further research on the anti-inflammatory activity and adverse effects of leech saliva should be explored for the acceptance of this unique technique as an additional treatment in the management of eczema.

CONFLICT OF INTEREST

The authors have no conflicts of interest.

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