



Research Article

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EFFICACY OF LEECH THERAPY AND AYURVEDIC COMPOUND IN VITILIGO: A QUASI EXPERIMENTAL STUDY

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ABSTRACT

This interventional, quasi-experimental study (pre-post test design) was conducted at Ayurveda Central Research Institute, New Delhi to study the efficacy of Leech Therapy along with some Ayurvedic medicine in vitiligo. Patients were selected by non-probability purposive sampling method after obtaining an informed consent. Twenty patients suffering from vitiligo (12 male and 08 female), aged more than 15 years and involving less than 25% of body surface area were enrolled. All the patients were kept in a single group. All the patients were called to OPD for Leech application once in a week. The patients were followed up weekly for first month and later on fortnightly for five months to monitor the improvement and adverse effects. The mean re-pigmentation achieved was 60 % (VASI score of 3.69), while the arrest of progression (stationary) was noted in 35 % of patients. In 5% of patient it was spreading. We recommend that leech therapy along with internal administration of Ayurvedic medicine is effective in the treatment of Vitiligo.

Key words: Vitiligo, Twak vikar, Jalauka avacharana, Leech Therapy, Kilas.

INTRODUCTION

Vitiligo is a common idiopathic, acquired, circumscribed hypomelanotic skin disorder of the skin and hair that affects 1-4% of the world's population.¹⁻³ Controversy still exists about its pathogenesis, because factors other than immunologic ones have been implicated such as the early cell death of vitiligo melanocytes related to their increased sensitivity to oxidative stress⁴.

Based on a few dermatological outpatient records, the incidence of vitiligo is found to be 0.25-2.5% in India.⁶ Gujarat and Rajasthan states have the highest prevalence 8.8%.⁷ It affects all the races and the frequency is same in both sexes. The cosmetic disfigurement caused by this disorder may lead to severe depression and suicidal tendencies⁵. In Charak Samhita vast description of skin disease is found. In Charak Samhita all the skin diseases are named as Kustha. Kusthas are classified in to two- Mahakustha and Kshudra Kustha. The clinical features of Vitiligo or Leukoderma clinically simulate with svitra or kilasa. It is classified under Kshudrakustha⁸. Intake of unsalutary food items results in vitiation of all three Doshas. These doshas vitiates rasa, rakta, mamsa and meda dhatu and resulting in localized white discoloration of skin^{9,10}. Acharya Sushruta in his compendium described about application of Leech in Skin diseases¹¹. Various modalities of treatment like phototherapy with psoralens, steroids, heliotherapy, lasers, vitamin D analogues and skin grafting etc. have been practiced in vitiligo. All these modalities have side effects like atrophy, telangiectasias and striae distensae. So this study was undertaken to find out the efficacy of Leech Therapy along with some Ayurvedic compound in vitiligo.

PATIENTS AND METHODS

The ethical clearance F.No13-01/2009, ACRI/Tech. Vol II. Sl no is 08 was granted for this study.

Objectives: To study the efficacy of Leech Therapy and Ayurvedic compound in vitiligo

Study Design: Quasi-experimental study (pre-post test design)

Study Type: Interventional

Intervention Model: Single Group Assignment

Masking: Open Label

Sampling Technique:

Non-probable Purposive/Judgmental sampling

Study Duration: six months

Study population: 20

Medication

Arogyavardhini vati 500 mg twice daily with normal water after food, Guduchi satwa 500 mg twice daily after food with water and Haridrakhand 6 gm twice daily after food with water was given orally for 6 month along with the Therapy.

Procurement of Drugs

All the aforesaid medicines were procured from IMPCL, India. Adult leeches, *Hirudo medicinalis* species, weighting 2–3 gm were purchased from a commercial supplier in Delhi and were kept in artificial pond water and starved up to 2 weeks before use.

Inclusion criteria

- Unequivocal evidence of de pigmented patches of milky white color.
- Presence of vitiligo lesions on the upper or lower limbs, face or trunk, progressive or stable.
- At least 10% body surface involvement.
- A high degree of motivation to adhere to the study protocol.

- The patients had received no treatment within the last 3 months.

Exclusion Criteria

- Denial to sign informed consent
- Pregnant and lactating patients.
- Those with systemic diseases such as diabetes mellitus, hypertension, thyroid and other autoimmune disease, malignancy, and bleeding disorder.
- White patches due to secondary causes.
- Less than 10years

Data Collection Procedure

All the patients were selected from OPD of ACRI, New Delhi had routine investigations done such as complete blood count, urine analysis, blood biochemistry and chest

X ray prior to Leech application. The treatment schedule consisted of weekly leech application in the vitiligo patch for 6 months. During the study, all other modalities of treatment for vitiligo were withheld. Side-effects were examined at each visit. All the demographic datas like age, sex and recurrence were recorded on proforma.

Table 1: Grading system used to assess the improvement at the end of the study

Grade	Observation	Clinical observation.
1	Re-pigmentation	In 25-75% area
2	Stationary	When there was no sign of pigmentation
3	Spreading	Appearance of new lesion and increasing size of existing lesion

Table 2: Pattern of Scoring to observe Extent of Re pigmentation

Extent of Re-pigmentation	Clinical observation	Score given
0%	No change in the de pigmented area	0
10%	Specks of re-pigmentation or concavity of margins	1
25%	Area of re-pigmentation less than the residual de pigmented area	2
50%	Area of re-pigmentation almost equal to that residual de pigmented area	3
75%	Area of re-pigmentation more than the residual de pigmented area	4
90%	Some specks of de-pigmentation left	5
100%	Complete re-pigmentation	6

Table 3: Re pigmentation scoring at the end of study

Extent of re-pigmentation	Score	Total number of Vitiligo patches	No of Subjects (n=20)
100 %	6	0	0
90 %	5	08	2
75 %	4	09	8
50 %	3	06	7
25 %	2	03	3
10 %	1	00	0

Table 4: Duration of vitiligo in studied cases

Duration in year	Male	Female	Total	Percentage
Less than 5 years	05	10	15	75
5-7	03	02	05	25
8-10	00	00	00	00
More then 10	00	00	00	00
Total	08	12	20	100

Table 5: Varity of Lesion

Variety of Lesion	Number of Patients	%
Circumsript	10	50
Scattered macular	08	40
Others	02	10
Total	20	100

Table 6: Assessment of re pigmentation at different weeks

Percentage of Re-pigmentation	Number of patients showing re-pigmentation at different weeks			
	8 weeks	12 weeks	16 weeks	24weeks
0	09	08	08	08
< 25%	09	04	00	00
25%-50 %	02	06	03	01
51-75%	00	02	08	09
>76%	00	00	01	02

Table7: Parts of the body involved

Parts affected	Number of Patients N=20	%
Face	09	45
Neck	08	40
Leg	02	10
Others	01	05

Table 8: Result of the Study

Grade	Observation	Number of patients after the study (N=20)	Male	Female
1	Re-pigmentation	12	07	05
2	Stationary	08	01	07
3	Spreading	0	00	00

Table 9: Statistical analysis

Result	Number of cases (N=20)	%
Re-pigmentation	12	60
Stationary	07	35
Spreading	01	5

Procedure of Leech Application and Medication

Procedure

The part from which the blood is to be sucked was first cleaned by non chlorinated water. Then the leeches were taken out from the container and sprinkled over with water saturated with paste of turmeric. Then for a moment they were kept in a basin full of water, and after 5 minute when they have regained their natural vivacity and freshness they were applied to the affected part. Their bodies were covered with a piece of white cotton. A small needle prick was given to the affected part prior to application of Leeches in case the leeches refuse to stick to the desired spot. The leeches were allowed to suck the blood till they left spontaneously. If not than a pinch of Haridra powder is sprinkled over the bite site.

Post bite Therapy Course and Follow-up

The ulcer incidental to an application of leeches was washed with spray of cold water. The ulcer was rubbed with Haridra powder or a piece of cotton soaked in the same substance applied as a compress over the part. The

ulcer was rubbed with honey in case of insufficient bleeding, while it was washed with a copious quantity of cold water if excessive bleeding set in.

RESULT AND DISCUSSION

Twenty patients (08 male, 12 female) with actively spreading vitiligo were evaluated. The extent of cutaneous involvement ranged from 10 % to 70%. After 6 months of treatment, 12 of the 20 patients (60%) showed re-pigmentation while the arrest of progression of vitiligo was noted in 07 of 20 patients (35%). In 1(5%) patient the vitiligo was spreading. Men showed re-pigmentation in 07 of 20 patients (35%) and female showed re-pigmentation in 05 of 20 cases (25%), so men showed greater re pigmentation than that in the female (Table-7). According to age, the effects of therapy were more pronounced in the younger age group. The duration of disease varied from 1 year to seven years. Exposed areas of body were most commonly affected in 17 (85%) cases.

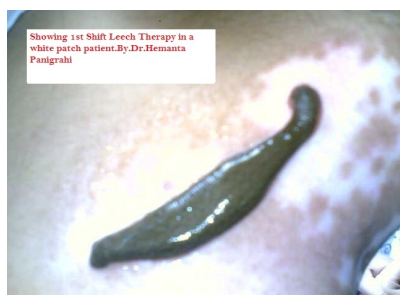


Figure 1: 1st shift of Leech application in a studied subject

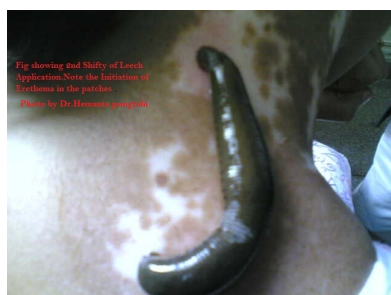


Figure 2: Note the initiation of erythematic patch in same subject in 2nd shift of leech therapy

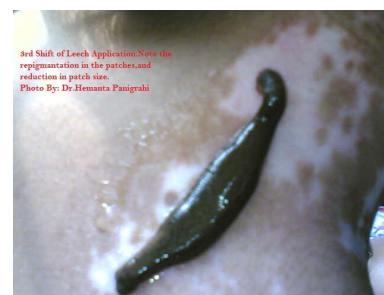


Figure 3: Note the initiation of re pigmentation in same subject after 3rd shift therapy

The Face and neck were the commonest site and found in 17 (85%) cases. Circumscribed type of vitiligo was seen in 10 (50%) cases, 18 (85%) patients had multiple lesions. Guduchi satwa (*Tinospora cordifolia* (Willd.)) is a very good Immunomodulator¹², Kusthaghna (cures skin diseases)¹³ and it act both on inflammatory¹⁴ and differentiation processes and hence aberrant immune response is counteracted, at least, at onset or during the relapse phases. In addition to aberration in the immune system, the etiology of vitiligo appears to also have a defect in the melanocyte itself. Many studies have demonstrated that the melanocytes in the skin of vitiligo patients can exhibit morphologic abnormalities. Leech saliva contains enzymes which modulate the maturation/activation of T cells and the migration of melanocytes and melanoblasts strengthen tissue immunity, promotes improvement of blood circulation to the organs, increased nutrition to local tissue, and anti inflammatory action. The chief ingredients of Haridrakhandha are Haridra (*Curcuma Longa* Linn.) and it has anti allergic and antiseptic effects. Ayurveda believes that in all types of skin disorders vitiation of Pitta and Rakta dosha occurs. Leeches which are born in water possess' sweet or soothing properties hence they should be used in sucking the blood vitiated with pitta dosha hence it subsides the vitiated Pitta and Rakta dosha thereby cure the disease.

CONCLUSION

This was quite evident in our study as we were able to achieve 60 % complete re-pigmentation and about 35% of subject's lesion became stationary. No adverse effects were found in our study. According to this study Leech application along with above mentioned ayurvedic compound are effective in preventing progression and inducing repigmentation of fast-spreading vitiligo without any associated serious side-effects.

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