



## Hirudotherapy In The Manegment Of Skin Diseases

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**Abstract:** Leeches have been used in medicine long time before BC. In recent years medicinal leech therapy has gained increasing interest in skin diseases ,pain management ,reconstructive surgery and other medical fields. Infection - one of the leading causes of skin diseases. Infection multiplies, causing an inflammatory reaction. In addition, any infection in the body releases toxins, which disrupt authorities filters. The toxins from infections are the primary and aggressive allergens. Presence of infection in the body significantly increases the allergic component. Therapeutic secret of leech - a complete periodic table content of biological active substances, the correct application of which has a strong influence on all body systems and have no side effects.

**Keyword:** Hirudotherapy-Medicinal leeches-Salivary enzymes-Skin diseases

**Introduction:** Hirudotherapy helps to boost the immune system, improve blood circulation in the tissues, enhance the overall well-being, leech saliva enzymes to help the body to break down body fat and more. Skin performs a huge number of important functions for the body. First of all, this protective function as well as thermoregulatory, and metabolic receptor. Healthy skin - a sign of a healthy person, a normal and full functioning of the internal organs. Skin diseases - is the result of violations of the internal environment, namely hormonal changes, metabolic disorders and others. That is why it is very difficult to diagnose these diseases. Treatment of skin diseases - as a very long process. Dermatitis - an inflammatory disease of the skin, usually associated with skin irritation external or internal factors. Dermatitis includes a variety of diseases: eczema, allergies, acne and so on. (Baskova *etal*,2008)

The medicinal leech is one of the few parasitic invertebrates widely used in medicine and as a scientific model object. Ayurveda the great medical science of India is now practiced meagerly; but when the challenges of resistant cases are alarming day by day ayurveda is the only hope. No doubt each country has its own traditional medical system, which they practiced since centuries back but due to lack of a well written script it gradually disappears. Rakta mokshana or blood letting is practiced in India since thousands of years. Our saints included this procedure under the five bio-purificatory procedures; they said that removal of impure blood from the body treats the root cause of the sufferings.(Cole D.1985)

Medicinal leech, *Hirudo medicinalis*, has been used in plastic and reconstructive surgery, to relieve venous congestion and to improve the microvascularization of flaps.(Whitaker *etal*2012;Fordel *etal*, 2004)Leech therapy's effect

during and after surgeries helps the body to heal more naturally and completely.

Leech therapy has established itself as an alternative remedy for the treatment of vascular disorders, since leech saliva can temporarily improve blood flow and ameliorate connective tissue hyperalgesia.(Michalsen *etal*,2007 )Clinical studies revealed that it can reduce blood hypercoagulability with an antiinflammatory effect in patients with thrombophlebitis. In many countries, wild leeches are still provided from local markets and utilised with antibiotic prophylaxies. (Baskova *etal*,2008)Many therapists used leeches for the healing of hypertension, varicose veins, hemorrhoids, gonarthrits, and secondary ischemia-related dermatosis.( Srivastava *etal* 2010). After reaching a popular peak in the early nineteenth century, leech trading became a lucrative business which encouraged more people to collect large numbers of leeches, which eventually caused them to become endangered species. Consequently, European and American authorities offered rewards for the invention of a new method to breed leeches Whitakar *etal* 2004. Meanwhile, leeches were employed to treat mental disorders, skin diseases, gout, headache, and whooping cough.(Britanica 2012.)

Leech therapy's effect on blood clotting during and after these surgeries helps the body to heal more naturally and completely.(Mory *etal*,2000)

Leech therapy is extremely beneficial in the healing process of skin diseases .due to enzymes found in leech saliva, which are known to reduce pain, inflammation and dissolving blood clots.

Enzymes found in leech saliva dilate vessels and work together with other enzymes to flush out toxins and promote healthy circulation to accelerate the healing process, as well as containing antibacterial enzymes that help prevent and eliminate the production of bacteria.

Leech therapy diminishes inflammation, swelling and pain of an injured area, leading to an accelerated normal function. During therapy, leeches also inject an anesthetic enzyme which deadens the pain, as well as an antibacterial enzyme, which destroys the bacteria present, preventing further infection of the site, all of which work together to speed up the healing process of sport injuries.

**Methods and Materials:**

The study was carried out on the patients suffering from skin diseases. patients were selected from IPD and OPD of the post-graduate department of Shalyatantra of Vidarbha Ayurved Mahavidyalaya and Shree Gopal Nanji Tank Ayurvedic Hospital, Amravati to find out the role of leech in skin diseases.

The aims and objectives of the study were

- 1) To find out the efficacy of Jaloukavacharan (Leech application) in the management of Skin diseases
- 2) To find out safe, simple and effective remedy i.e. Leech application for skin diseases. The selected patients were divided into following four different groups consisting of minimum 20 patients.
  - 1) First group was treated by Leech Application.
  - 2) Second Group was treated by Leech Application along with local application
  - 3) Third Group was treated with Leech Application along with antibiotics.
  - 4) Fourth Group was treated with modern medicinal of treatment like Antibiotics.

**Investigations:**

The common investigations performed were Blood for-

1. Haemoglobin estimation
2. Total leucocyte count
3. Differential Leucocyte count
4. Bleeding time
5. Clotting time

Erythrocyte Sedimentation Rate

Blood Sugar-fasting Post prandial.

The surgical bio-instrument i.e. Leeches were made available and preserved under the standard lines as mentioned in the classical tests. The method of application of leeches is according to ancient method as described by Acharya Sushrut. The Process of Leech application was carried out in the phased manner in Pre-operative, operative and post-operative management.

- 1) Pre-Operative (Purvakarma)
 

In pre-operative process leeches were kept in haridra kalka (paste of turmeric) and water for a minute. Then leeches were kept in fresh water for two minutes. These leeches were

used for application. Leech application was done to the selected patients in sitting position.

- 2) Operative (Pradhankarma)
 

In operative procedure leeches were applied. The number of leeches varied according to the size of affected area. In 5cm area one leech was applied.

The affected area was cleaned with water. Then leech was applied. For easy attachment of leech minor puncture was done by a sterile needle. Then also if the leech doesn't get attached another leech was applied.

- 3) Post-Operative (Paschyat Karma)
 

In post operative process leeches are removed from the site by sprinkling turmeric powder. Generally leeches leave the site on its own, when it gets completely filled with blood.

Blood from the gut of the leeches are removed by slowly and gently squeezing them from tail to mouth. Then dressing is done by turmeric powder and tight bandage is applied.

The leech application was done once a week and single leech was applied for each patient. As it is a OPD procedure so patients need not to admit in the hospital.

For the second group along with leech application sarivadi kwatha (20 ml) was given orally and Lodhradi lepa was given for local application.

In the Third group along with leech application antibiotic erythromycin 250 mg QID was given for local application.

In the Fourth group patients were treated by modern medicinal line of treatment. They were given erythromycin 250 mg QID along with local application of Benzoyl peroxide 5% ointment.

The complete record along with the history of the patient, all necessary investigations and the progress was noted down in the standard proforma which was prepared in the department under the guidance of head of the department.

**Observations and Discussion**

Table 1. Group-wise distribution of patients.

Sr.No.	Group	No. of Patients	Percentage
1	I	20	25%
2	II	20	25%
3	III	20	25%
4	IV	20	25%
Total		80	100%

Table 2. Sex-wise distribution of patients

Sr.No.	Sex	No. of Patients	Percentage
1	Male	46	57.50%
2	Female	34	42.25%
Total		80	100%

In Present study, out of 80 patients 46 patients were male and 34 patients were female.

Table 3. Diet-wise distribution of patients

Sr. No.	Diet	No. of Patients	Percentage
1	Vegetarian	16	20%
2	Non-vegetarian	22	27.25%
3	Mixed	42	52.50%
Total		80	100%

Out of 80 patients, 52.50% patients were taking mixed diet, 27.25% patients were Non-vegetarian and 20% patients were vegetarian.

Area-wise distribution of patients

Sr.No.	Sex	No. of Patients	Percentage
1	Rural	24	30%
2	Urban	56	70%
Total		80	100%

Above table shows that 56 patients out of 80 patients were from urban area while 24 patients were from rural area.

Sr. No.	Status	No. of Patients	Percentage
1	Higher Class	20	18.75%
2	Middle Class	50	66.25%
3	Poor Class	10	15%
Total		80	100%

The above table shows that maximum number of patients i.e 50 patients belong to higher middle class.

Occupation wise distribution

Sr. No.	Occupation	No. of Patients	Percentage
1	Students	40	53.75%
2	Service	13	12.50%
3	Businessman	07	8.75%
4	Household	12	18.75%
5	Others	8	6.25%
Total		80	100%

The Above table shows that out of 80 patients maximum 53.75% i.e.40 patients were students.

Chronicity (Duration) wise distribution

Sr. No.	Chronicity (Duration)	No. of Patients	Percentage
1	Upto 1 year	50	68.75%
2	Upto 2 year	15	18.75%
3	Above 2 year	15	12.50%
Total		80	100%

In our study, Maximum number of patients were having 1 year duration i.e 50 patients and 15 patients were having 2 years duration while remaining 10 patients were having duration above 2 years.

Distribution according to recurrent and fresh nature.

Sr.No.	Nature	No. of Patients	Percentage
1	Fresh	56	70%
2	Recurrent	24	30%
Total		80	100%

Present study of 80 patients contains 56 fresh patients and 24 recurrent patients.

Regularity in attending Hospital

Sr.No.	Regularity	No. of Patients	Percentage
1.	Regular	65	85%
2.	Irregular	15	15%
Total		80	100%

**Conclusion:**

During treatment it has been found that 80% patients were taking treatment regularly while 20% patients were irregular about their treatment.

Severity of signs and symptoms before and after treatment.

1) Pain:- In Group I, out of 14 patients, two patients got relief after 24 hours. All the 14 patients got relief after 3 weeks. In Group II, out of 12 patients, four patients got relief after 24 hours and it took 2 weeks for all patients to get relief from pain.

In Group III, out of 13 patients four patients got relief after 24 hours and all 13 patients got relief after 3 weeks. In Group IV, out of 12 patients, four patients got relief after one week and it took 4 weeks for all 12 patients to get relief from pain.

2) Redness:- Mild redness was reduced completely in group I, group II and group III after 2 weeks while moderate redness was reduced after 3 weeks in group I, group II and group III whereas in group IV mild redness was reduced in 4 weeks and moderate redness was reduced in 5 weeks.

3) Tenderness:- In Group I, out of 12 patients of mild tenderness two patients got relief after 24 hours and all patients of mild tenderness got relief in 2 weeks, while moderate tenderness was relieved in 4 weeks.

In Group II, out of 10 patients of mild tenderness two patients got relief after relief after 24 hours and all patients got of mild tenderness got relief in 2 weeks, while moderate tenderness was relieved after 3 weeks.

In Group III, out of 12 patients of mild tenderness three patients got relief after 24 hours while it took 3 weeks for complete relief. Moderate tenderness was relieved after 4 weeks.

In Group IV, mild tenderness was relieved after 4 weeks while moderate tenderness was relieved after 5 weeks.

4) Scarring:- In Group I, out of 8 patients of mild scarring five patients were improved after 10 weeks while in 2<sup>nd</sup> degree scarring out of 8 patients two patients were improved after 10 weeks and in case of 3<sup>rd</sup> degree scarring out of 4 patients was improved after 10 weeks.

In Group II, in case of 10 patients of mild scarring 7 patients were improved and in case of severe scarring out of 3 patients one patient was improved after 10 weeks.

In Group III, out of 7 patients of mild scarring 3 patients were improved, while in case of moderate scarring out of 9 patients 2 patients were improved and in case of severe scarring out of 4 patients one patient was improved after 10 weeks.

In Group IV, out of 9 patients of mild scarring 2 patients were improved, while out of 5 patients of moderate scarring 1 patient was improved and out of 5 patients of severe scarring 1 patient was improved and out of 5 patients of severe scarring one patient was improved after 10 weeks.

During Hirudotherapy, blood oozes out of the area that has been treated. Sometimes leeches tried to move to another area of the body where continuous monitoring was important. On occasion, after leech therapy some patients were allergic to leech saliva. So proper prophylaxis has been done before hirudotherapy.

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