

A Comparative Study Between Leech Applications And local Application Of Corticosteroids In The Management Of Eczema With Special Reference To Vicharchika

Dr. Bhausaheb Patange

Hod shalyatantra

Ayurved Mahavidyalaya, Pusad

Abstract:

Vicharchika in Ayurveda described as shudraroga .It commonly occurs due to vitiation of Tridoshas ,beta,pitta and kapha .Among all these types Pittaj vicharchika is commonest disease.It include in Shudraeoga as per Sushruta.kushta roga is described in two types 1) maha kushta 2) Kshudra kushta Common features in Vicharchika Severe itching sensation in affected part .Dryness of the skin ,oozing from affected areas.Its some times associated with fever.

According to modern science exact cause of eczema is unknown.But many assumptions regarding Eczema one of them is .it is due to overactive response of the body to an irritant.It is also found in patients who has previous history of asthma in early childhood .it is skin disease and always present with red ,inflammatory patches ,In this comparative study I have used leech applications and corticosteroids application in eczema specially dry eczema.Total 40 patient chooses.out of these 20 patients treated with leech applications and remaining 20 patients treated with corticosteroids application.Dramatic result has been obtained from the patient who were treated with leech applications also no side effects occurs in these patients.Thickening of the skin especially if the strong steroids are used has been observed after topical use of corticosteroids.for long duration.changes in skin colour seen.skin lightning after many months of using very strong steroids.increased hair growth seen in most of the patients using topical

Introduction:

Raktamokshan is a term to denote para surgical procedure .In Sushrut samhita the oldest book described Jalaukas and Jalauka Vacharan for the purpose of blood letting .Jalaukavacharan is best therapy because of safety and higher efficiency in Rakta Janya Roga .Jalauka jala + Ayu means whose life depends on water. The two types of Raktamokshan are Pracchana Karma (scrapping or scarification) and Siravedha Karma (vein puncture) .Jalukacharan has been seen as an important therapeutic modality in various health conditions.

Indication of leech application: Vagbhat Gulma, Arsha, Kushta, Vatrakta, Galaroga, Netraroga, Visha and Visarpa. Vicharchika, Dadru, Indralupta, Mookdushika Mandal Kushta Khalityav, Agnivisar

In Ayurveda the Jaloka (leeches) has been classified in two types 1) Savisha 2) Nirvisha These were further sub-classified into six types each.

Twelve types of Jaloka were named according to their distinct properties

1) Types of Nirvisha Jalokas are Kapila, Pingala, Sankumukhi, Mushika, Pundarikamukhi and Savarika. The six types of Savisha Jaloka are Krishna, Karbura, Algarda, Indrayudha, Samudrika and Gochandana. Jaloka on the basis of their breeding grounds were also determined as Savisha and Nirvisha.

2. Leeches in biomedicine

Leech is a fresh water animal, live in eutrophic water bodies. The temperature suitable for survival of leeches range between 0 C to 30 C, like other water being leeches were also sensitive to rapid changes in temperature. For therapeutic purpose in leech farming, it is recommended by FDA that the animal must be maintained without feeding at a temperature range of 4 C to 13 C and water volume area per animal should not be less than 0.7 L, with typically 10 to 15 leeches being held in a large jar. Leeches take up oxygen dissolved in water. All type of contaminants cause stress to the leeches causing secretion of mucous layer over their body.

Leeches are hermaphrodite; still there is a need of a partner for reproduction. Reciprocal fertilization leads to reproduction in leeches. Young leeches are produced in three to five weeks from the eggs stored in cocoons. These young leeches feed on the blood of frogs and fishes. At the age of two years these leeches are fully matured to be used for therapeutic purposes. Leeches have a pair of suckers, anterior sucker and posterior sucker. Anterior sucker is oral sucker consisting of the jaw and teeth; it is used for connecting to host for feeding. Through this sucker leeches secrete its salivary secretion which is anesthetic, which makes the host insensitive to its bite. This leech saliva (LS) contains more than 100 bio active substances. These are responsible for various therapeutic benefits like

anticoagulant, anti-inflammatory, anesthetic, thrombolytic, vasodilator, and anti-edematous, bacteriostatic and blood- and lymph-circulation enhancing properties. . These leeches are stored in a sterile container with non-chlorinated water. The water of the containers is routinely changed every day or on alternate day depending on the presence of turbidity in the containers. The number of leeches should not be more than fifty for a container of ten liters capacity. These containers are placed in cold dark placed with temperature not exceeding 4 C. These containers can be placed in refrigerator also but it should be ensured that the leeches should be maintained at normal room temperature several hours before their use in a therapeutic session. This will help leeches in regaining their activity and motility.

3.For Jaluka avacharan thick paste of mustard seed and turmeric was applied on Jaloka. Then Jaloka was suspended in solution of turmeric for a Muhurta (approximately 45 min) till they regained their motility. This Jaloka was applied on roughened desired spot for Jaluka avacharan.

Jaluka chharan in Vicharchika (eczema)

Eczema is a chronic inflammatory skin disease characterized by itching burning sensation, erythematous, scaling ,cracking.It is mostly seen on folds of elbows or behind the knees .people with eczema is having dry skin tendency which makes them vulnerable to the drying effect of soaps.climate and psychological factor can play in important role in occurrence of eczema.patient may have family history of allergic asthma.climatic extremes like heat, severe cold and psychological stress promotes the development of eczema

A clinical study was carried out on 40 clinically diagnosed cases of Vicharchika. Among them, 20 patients were subjected to Jaluka avacharan for four sittings in four consecutive weeks. Number of leeches applied was decided on the basis of the size of lesion (1 cm $\frac{1}{4}$ 1 leech). And 20 patient treated with corticosteroids application.

Topical corticosteroids

The topical corticosteroids mainly acts as anti inflammatory it temporary relieves symptoms like eczema it not a permanent treatment .can be prescribed in different strength depending upon the severity .in moderate severity betamethasone valproate and betamethasone dipropionate used.

Methods of using corticosteroids:Apply corticosteroids at a different time of day .continue to use it until 48 hrs after the flare up has cleaned so that inflammation under the skin surface is treated And 20 patients was subjected to local application of corticosteroids cream (two times a day).Prior to the therapy the patients is examined thoroughly and

particularly for blood born infections and contraindications, then the treatment are appropriately planned. A precaution at the time of therapy is undertaken of maintaining the mammalian range skin temperature on which leech is to be attached and the site should be clean because leeches are repelled by perfumed and greasy skin

Selection criteria:

Inclusive criteria :Both gender, Age group 21 -50 yr, complains of itching, burning sensation, redness, scaling, cracking, crusting, swelling, weeping and oozing of the skin

Exclusion criteria: patient with systemic illness LIKEN, DM, Impaired renal function, or Hepatic function patient with other skin diseases like psoriasis, Ictheosis, etc Allergy dermatitis.

Duration of the treatment: Four week.

Total 40 patient selected 20 For leech applications and 20 for corticosteroids application.

Follow up: once in a week for four week after the completion of trial.

Relieved: 50% relief in sign and symptoms

Partially relieved: 25% relief in sign and symptoms.

Beneficial effects of Leech applications

Anticoagulation effect. One of the important actions of the Leech applications is the anticoagulation effect. The anticoagulant effect is majorly contributed by hirudin protein, gelin, eglins C, factor Xa inhibitor, destabilase complex, new leech protein-1, whitide, and whitmanin 29. The hirudin protein of the LS is known to have thrombin inhibition by binding itself with the thrombin of the vertebrate blood and thus inhibits fibrin production resulting in prevention of coagulation of blood. This compound is functionally similar to heparin. It is identified molecularly, synthesized through recombinant techniques using yeast, bacteria and higher eukaryotes. It used as thrombosis prophylaxis, particularly very useful in patients with hypersensitivity for heparin. The use of hirudin protein is extended in patients with antithrombin III deficiency Gelin and eglins C are similar thrombin inhibitor present in LS. They are antiinflammatory and known to have effect on inhibiting the activity of a-chymotrypsin, chymase, subtilisin, elastase, and cathepsin G. They have major therapeutic role in diseases associated with inflammation. Eglin is also known to have proteinase inhibitors action [60]. In addition to these above compounds of LS, the factor Xa inhibitor have as pronounced action as an anticoagulant. Destabilase complex is another compound of LS, basically it is an invertebrate lysozyme developed as a resultant of symbiotic relationship between the leech and A. hydrophila bacteria. It possesses both enzymatic and non-enzymatic antibacterial action and it also assist in dissolving blood clots. This property of destabilase

complex is useful in thrombophlebitis [61]. There are few newly identified proteins which assist in anticoagulant effect they are new leech protein-1, whitide, and whitmanin - 29. Analgesic and anti-inflammatory effect. This property of hirustastin establishes it as a potential analgesic. Ghilantens is a protein component of LS which prolongs the prothrombin time of normal human plasma and it hampers the activity of factor Xa in blood coagulation. In animal experimental models it is known to suppress the metastases processes

Result and discussion:

Environmental causes of eczema ,Allergens ,dist, pet, pollution,and dandruff,change in environmental conditions also increase symptoms of eczema foods like egg,nuts ,soya products dairy products can increase symptoms of eczema.change in hormone levels in female during pregnancy and menstrual cycles also increase symptoms of eczema.stree also play major role in eczema.

In this study out of 40 patients 25 (62%) patients were female and15 (38%) were males. Females are affected more than males. This finding was in accordance with the survey of Centers for DiseaseControl and Prevention (CDC).

Its prevalence was slightly higher in the age group of 31-40 years i.e.16 cases (40%) and least in the age group of 41-50 years i.e 10 cases(25%). Out of 40 patients 14 (35%) were in the age group of 21-30years, 16 (40%) were between the age of 31-40 and 10 cases (25%) were in the age group of 41-50 years (Figure 1).

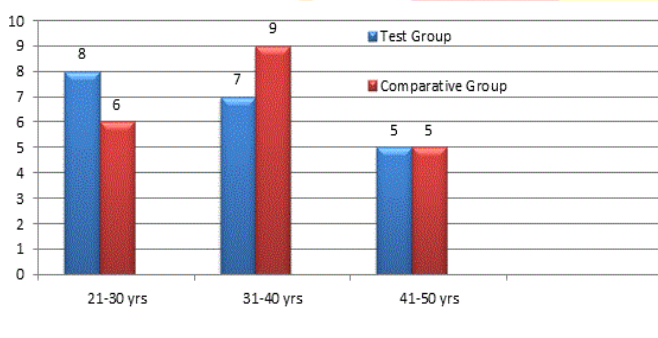


Figure 1: Age wise distribution of patients in both groups

Therapeutic response of test group showed that out of 20 cases,15(75%) cases were relieved from their symptoms, 3(15%) were partially relieved and 2 (10%) patient had no response. In comparative group 11(55%) patients relieved of the symptoms, 5 (25%) patients got +6partial relief and 4 (20%) patients didn't response. Results were assessed by using the Student't' test and the two groups were compared regarding relief of symptoms by X2 test. The result of the study showed a significant

improvement in sign and symptoms in the test group ($p<0.01$) as compared to comparative group ($p<0.05$) (Figure 2).

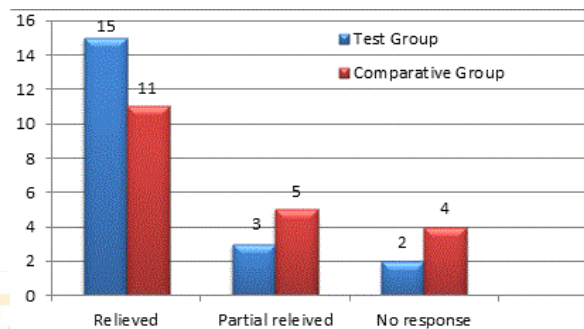


Figure 2: Response of the treatment

At one week follow-up, patients who received leech therapy reported significantly improvement in their sign and symptoms than those who were on only corticosteroids medication. The leech group continued to report better function, better overall symptom relief and improved quality of life throughout the one month follow up period after the trial.

Conclusion:

- 1) Certain food increases symptoms such as bits and dairy products.
- 2) 40% Cases of eczema is found age group between 31 – 40 year age group.
- 3) It is having close relationships with environmental changes like ,smoke pollution,
- 4) It is not a contagious disease.
- 5) Though leech therapy is useful in eczema in relieving symptoms of eczema but it is not full treatment of the eczema.
- 6) The present study reveals that leech application is safe effective and of short duration of treatment.
- 7) No recurrence or exacerbation was reported by any patient after completion of trial up to one month of follow up. No patient report any adverse event throughout the trial and follow up .Eczematous signs and symptoms were improved.but rate of improvement is faster in test group by this therapy eczema patient can be saved from exposure and adverse effects of steroid drugs in conventional therapy.After reviewing various aspects of Jaluka avacharan and corticosteroids it can be concluded that Thus, jaluka avacharan is useful in eczema.

Comperative study:

Use of corticosteroids	Jaluka Avacharan
1)Thining of skin	1) No thinning
2)Changein colour	2) No change Of skinin colour
3) Increased hair Growth	3) No hair growth
4) Risk of side Effect increased	4) No risk of side effect

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