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EFFECT OF ĀYURVEDIC TREATMENT ON TROPHIC ULCERS OF LEPROSY - A COMPARATIVE CLINICAL TRIAL

Sarita Gaikwad*, Pradip Y. Gaikwad**

Abstract: - A comparative clinical trial on trophic ulcers in leprosy was undertaken to examine the effect of āyurvedic treatment on healing of trophic ulcers. There were 31 subjects in the study group and 31 in control group. The subjects were given āyurvedic treatment and the control subjects were treated conventional allopathic line of treatment. The study proved that the āyurvedic treatment is a better alternative for treating trophic ulcers in leprosy.

Introduction

Chronic ulcers are commonly encountered in leprosy patients and are a major cause of disability. Chronic ulcers in the sole of foot are trophic in nature and the basic factor in their production is the involvement of posterior tibial nerve, the affection of this nerve producing loss of sensation on the sole of foot. Repeated injury and pressure of body weight acting on the denervated insensitive sole produce ulcers which are known as trophic ulcers. The ulcers get secondarily infected and may result in destruction of underlying bones and degeneration of joints[1-3]. The present study was undertaken to find the effect of āyurvedic treatment on trophic ulcers of leprosy and to compare efficacy of treatment with current line of allopathic treatment.

Material and methods

The study was a comparative clinical trial undertaken in Dr. Bandorawalla Leprosy Hospital, Pune. The Control group was from two Leprosy Homes at Dudulgaon and Nerali.

Selection criteria:- i) The age of the ulcer was to be 1 year or more, ii) The ulcers were not to be very deep, affecting bones and iii) Willingness to undergo the trial with readiness to follow the guidelines.

Total 62 patients i.e. 31 patients in the study group and 40 patients in the control group (i.e. from two Leprosy Homes) were selected. Of which, 9 patients from control group were left before completing the study period and 31 patients remained in the control group.

Study period: - March to June 2004

The study group subjects were physically examined and their ulcerative wounds were noted in terms of site, size, shape, discharge, floor and walls. Their random blood sugar, routine hemogram and urine examinations were carried out. Similarly the control group subjects were physically examined and ulcers were noted as for the study group.

1. *RMO and Head, Sassoon Hospital Pune;* 2. *Ast. Director of Health Services (Lep) & Administrator, Dr Bandorawalla, Lep Hospital, Kondhawa, Pune*

Local treatment (study group)

The ulcers of study group subjects were washed with the decoction of barks of udumbara (*Ficus racemosa*), nyagrodha (*Ficus benghalensis*) and aśvatha (*Ficus religiosa*). The barks of these plants contain anti inflammatory, antibacterial and healing properties (Bhāvaprakāśam)[4] due to the presence of tannin, silica and phosphoric acid. Every alternate day the infected ulcers were washed by cow's urine (which has antibacterial properties).

The ulcers were dressed with Vraṇaśodhana oil, which contains haridra (*Curcuma longa*), mañjiṣṭha (*Rubia cordifolia*), nimba (*Azadirachta indica*), madhuyaṣṭi (*Glycyrrhiza glabra*) dārvi (*Berberis aristata*), trivṛt (*Merremia turpethum*), seed of tila (*Sesamum orientale*) and saindhava (rocksalt). All these compounds have antibacterial, antileprotic, antislough properties and the oil itself produce the facilitating effect on healing.

On appearance of granulation tissue, the ulcers were dressed with Vraṇropaka oil, which contains extracts vaṭa (*Ficus benghalensis*), kadamba (*Neolamarekia cadamba*), udumbara (*Ficus racemosa*), karavira (*Nerium* oleander), aśvatha (*Ficus religiosa*), arka (*Calotropis gigantea*), vetra (*Calamus rotang*), kuṭaja (*Holarrhena pubescens*) and plakṣa (*Ficus microcarpa*).

In the final stage, the ulcerated wounds were dressed with powder of triphala which helps healing at faster rate.

Systemic treatment (study group)

The study subjects were given musta (*Cyperus rotundus*) and triphala (*Terminalia chebula, Emblica officinalis* and *Terminalia bellirica*), 5g each twice daily. Musta acts as appetizer and removes the excessive secretions from the body. *Terminalia chebula* removes imbalance caused due to various factors and restorers body health. It has digestive, diuretic, astringent properties. *Emblica officinalis* contains tannin, calcium, iron, carotene and thiamine which help in healing the ulcers. It contains all the rasa except salty one. It has effect on nerve conduction and facilitates memory and intelligence.

TABLE 1

Comparison of study and control groups before the treatment

Particulars	Study group			Control group		
	Male	Female	Total	Male	Female	Total
1. Sex	21	10	31	22	9	31
2. Number of ulcers	28	10	38	26	11	37
3. Infected ulcers	4	1	5	4	1	5
4. Type of leprosy - PB	13	7	20	8	4	12
5. Type of leprosy - MB	8	3	11	14	5	19
7. Average age	58.19 years			54.00 years		
8. Median age of ulcer	20 months			24 months		
9. Average area of ulcer	13ccm			2.36ccm		
10. Type of ulcers:						
- Occurrent	3			5		
- Recurrent	32			30		
- Non healing	3			2		

Terminalia bellirica acts by rapid healing of ulcers. It possesses anti-inflammatory and astringent properties

The study subjects with infected ulcers were given haridra (*Curcuma longa*) 2g twice daily, as haridra has antibacterial, antioxidant properties. The patients were given sūkṣma triphala (in which the properties of triphala are enhanced to number of times and acts as an antibiotic) which was stopped when the infection was controlled and the patients were continued with musta and triphala.

The study subjects would have to be given special diet but due to unavoidable circumstances this was not possible or else the results could have been even better. The subjects were told not to add extra salt in the diet and not to consume pickle.

Local treatment (control group)

The ulcerative wounds were washed by savlon/ dettol, cleaned, dried and applied Soframycin ointment locally and dressed by sterile gauze and bandage. The infected wounds were washed with Eusol, dried and dressed with Magsulph - glycerin combination.

Systemic treatment (control group)

The control group subjects with infected ulcers were given antibiotics, anti-inflammatory drugs like Aspirin, Ibuprofen, Voveran (Dichlofenac) with Vit - C, which helps in faster healing.

Follow up: - The study subjects were examined once in a month. The control group patients were examined once in a week.

Discussion and results

The study subjects were having 38 ulcers while the control group subjects 37 ulcers. The median age of ulcer in the study group was 20 months, while that in control group was 24 months. The average age of patient in study group was 58.19 years while that of control group was 54 years. Majority of the ulcers in each group were recurrent ulcers.

The ulcer of study group was 5.5 times bigger in size (i.e. the ulcer area of study group was 13 ccm while the ulcer size of control group subject was 2.36 ccm). The size of ulcer of study group reduced from 13 ccm to 3.01 ccm while the size of ulcer of control group subjects was 2.36 ccm, which in fact increased to 2.40 ccm.

In the study group, 89.47% ulcers showed more than 50% improvement; in other words 34 out of 38 cases showed improvement (c^2= 16.00, $p<0.001$ highly significant) and 8 out of 38 cases were completely healed. The control group showed 43.24% improvement as 16 out of 37 ulcers showed improvement and only 3 out of 37 ulcers were completely healed.

TABLE 2

Comparison of study and control groups after the treatment

Group	Improvement			No improvement
	100%	>50%	30-49%	
1. Study	8/38 21.05%	34/38 89.47%*	4/38 10.52%	-
2. Control	3/37 8.10%	16/37 43.24%	1/37 2.7%	20/37 54.05%

*÷2 = 16.00; p<0.001 highly significant

TABLE 3

Comparision of improvement in size of ulcer before and after the treatment

Group	Sise of ulcer		Improvement
	BT	AT	
1. Study group	13 ccm	3.01 ccm	76.84%
2. Control group	2.36 ccm	2.40 ccm	-1.52%*

BT - Before treatment; AT - After treatment
* deterioration

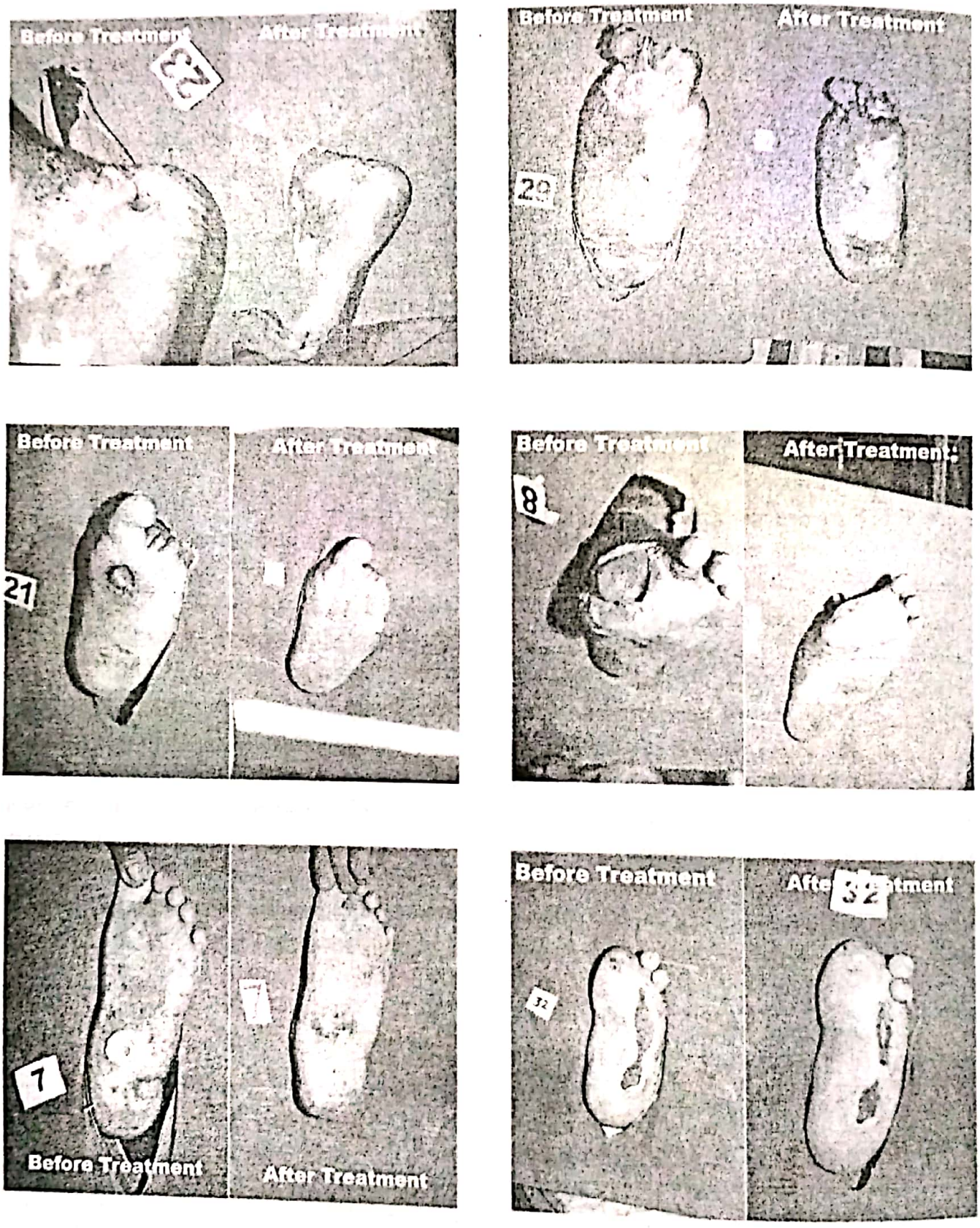

Fig. I
Few photographs of ulcers before and after the treatment

In the study group there were 5 infected ulcers out of which 2 showed complete (100%) healing and the rest 3 showed more than 70% improvement. In the control group out of 5 infected ulcers, only one showed more than 50% improvement and there was no improvement in other 4 infected ulcers.

The study subjects showed marked improvement in other ailments like hyper acidity, chronic rhinitis, chronic constipation and their over all health improved. Comparison of both the group before and after the treatment is shown in Tables 1, 2&3 (Fig I)

Conclusion

The ulcer in study group showed quicker and better healing than that of control group subjects. The area of ulcer in the study group was 5.5 times more than the size of control group subjects. Yet there was 76.84% improvement was noted in them while in control group there was no improvement in 54% ulcers and the average size of ulcer increased by 1.72%

The therapy has shown outstanding effect in the management of ulcer in leprosy cases, hence it can be recommended for treating such cases. Director of Health Services of Maharashtra State has accepted the findings of the study and the protocol was agreed to be circulated to all Civil Hospitals, Rural Hospitals & Leprosy Hospitals/ Homes.

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