

Community dermatology in practice: Control of morbidity in lymphatic filariasis patients in Indian villages

Community dermatology emphasises that skincare is not an intervention for skin diseases alone.

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Community dermatology (www.skincareforall.org) emphasises that skincare is not an intervention for skin diseases alone, but embraces trauma, burns, lymphoedema and neglected tropical diseases.

Lymphatic filariasis (LF) is a neglected disease of the poor, prevalent in 78 countries. In India there are at least 20 million people with signs and symptoms of LF – swollen legs and loss of barrier function of the skin, creating bacteria entry points (BEPs). Consequently, these patients frequently have cellulitis, causing high fever and days off work every month. The causative organism is a filarial parasite – a nematode worm – transmitted by mosquitoes. In India prevention of transmission has been managed by adding diethyl carbamazine (DEC) to salt or as a tablet given to entire populations in endemic areas.

However, it is not sufficient to kill the filaria in the collecting lymphatic ducts. The damage is already done to the lymphatic system, which then malfunctions, producing the characteristic symptoms of filariasis. Therefore, there is still a need for morbidity control.

The World Health Organization launched the Global Programme for the Elimination of Lymphatic Filariasis (GPELF) several years ago. The first objective is to eliminate LF by prescribing DEC, ivermectin and albendazole. The second objective, controlling morbidity, is only now being put into practice and has not as yet been fully launched.

In India there is no major public health intervention against filariasis. However, for many years debulking surgery has been offered to a small number of patients. Surgery has advanced to include repair of lymphatic function by anastomoses to small veins and other technologies, but these interventions are expensive, especially because patients need hospital care for several weeks. The only public health intervention more widely offered has been advice on how to wash the limbs. The poor in rural areas are most affected by the disease, so a not-for-profit charitable organisation, the Institute of Applied Dermatology (IAD) in Kasaragod, Kerala, devised a suitable programme that employs locally available supervisors and simple technology that is easy to administer and teach, and most importantly at low cost. In 2004 the IAD launched an integrative treatment protocol to reduce LF morbidity by combining ayurveda, yoga, and compression therapy supplemented when necessary by modern dermatology drugs to treat BEPs. Ayurveda is an Indian system of medicine that is more readily available and

culturally accepted in rural areas. Witte and Bernas suggest that this integrative self-care treatment could fit any environment, whether an academic medical centre or a remote village.^[1] GPELF discussed this integrative treatment during its half-time review.^[2] It is possibly a candidate for being the most successful community dermatology intervention so far.

Our article, quoting from previous publications, discusses a community-based intervention in two districts of India where filariasis is particularly prevalent and which have a high poverty index – Alleppey in Kerala (AK) and Gulbarga in Karnataka (GK).

Methods

The programme was implemented for 21 months as a public-private partnership of the Central Council for Research in Ayurvedic Sciences, Department of AYUSH, Government of India and IAD, Kasaragod, Kerala.

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Rapid survey

The field co-ordinators and the programme co-ordinator (fourth author) met the district health officers and district malaria-filaria officers to discuss the plan. Prevalence data were attained from district malaria-filaria officers to identify the regions within the district where the maximum concentration of LF patients are recorded. Accredited social health activist (ASHA) workers and the local community-based organisation (CBO) network were involved in rapid survey programmes. ASHAs are trained female community health activists, selected from the same village at a norm of 1:1 000. They are trained to work as an interface between the community and the public health system. They receive training on common medical problems, conducting focused group discussions, and on major national health programmes, such as malaria and tuberculosis. Health campaigns and public gatherings were used for advocacy. The rapid survey was used to identify the clusters of LF patients.

LF camps

The total number of patients residing within the geographical area was divided into groups, based on their locality. Clusters of LF

patients were identified by ASHAs. Fifty 1-day community awareness and medical treatment camps (LF camps) were organised in endemic villages near the LF patient clusters to recruit patients. These camps were not residential and were supported by ASHAs and local collaborators. Each camp had an inaugural public function involving social and political leaders of the locality, a patient education class, a skincare demonstration (Fig. 1) and a demonstration of simple yoga exercises (Fig. 2). Later, patients were educated on LF, its aetiology, environmental factors that complicate the disease, disease-associated pathological changes and care of BEPs.^[3] All patients attending LF camps were encouraged to learn and practise simple yoga exercises demonstrated during these camps. Selected patients who met the inclusion criteria were then referred to the LF treatment day-care centre.

Information, education and communication (IEC) materials were distributed freely during LF camps. These included local language flyers, a BEP information sheet and checklist, yoga checklist, yoga information sheet/book, patients' feedback form, video CDs demonstrating pre-Indian manual lymph drainage (IMLD) yoga asanas and post-IMLD

yoga asanas (13 asanas and 4 pranayama) and propaganda and awareness activities.

Training of health workers

The programme obtained permission from district authorities to conduct camps and to enlist the active participation of ASHAs to identify patients. However, ASHAs were found to have insufficient knowledge of LF when assessed during informal discussions. ASHAs were then trained during their monthly district-level meetings (Fig. 3) using audiovisual aids and IEC booklets. This included detecting lymphoedema patients, counselling, monitoring quality of life of patients, care of BEPs, skin washing and self-care integrative treatment procedures. We also trained the local collaborators such as NGO/CBO office bearers.

Establishing village units

We hired an old house for implementing the project in AK. District health officers allowed the project staff to occupy vacant staff quarters behind the community health centre in GK (Fig. 4). A Memorandum of Understanding (MOU) was signed between IAD and Taluk health officers. The initial set-up required several visits from our staff, who already had experience

with the community's HIV/AIDS-targeted intervention programme. A lymphoedema care team (LCT) was formed in each centre, led by an accredited, fully qualified ayurvedic doctor, a general nurse and a midwife. A qualified medical social worker supported field activities. Ten healthcare assistants (locally recruited personnel who are trained as community lymphoedema workers) supported self-care treatment and training given to patients. All members were recruited locally. They received training at the IAD, Kasaragod, for one month. The treatment centre was partitioned to provide different components of the treatment.

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Applied dermatology intervention

A total of 408 patients in AK and 600 in GK who had unilateral or bilateral lower limb lymphoedema – grade 2 late or grade 3 – were treated. Patients with, or who had recently experienced, an acute inflammatory episode (cellulitis) during the previous month were not selected because the tissues take several weeks to recover, and procedures such as massage and compression are uncomfortable. Treatment included an initial two weeks of supervised treatment as outpatients, followed by domiciliary self-care, in which a family member assisted (Fig. 5). Patients were followed up at 1, 2, and 3 months. The treatment components were: skin wash, soaking the affected limb in an ayurvedic skin tonic *phanta*, a sequence of yoga exercises before and after IMLD using selected ayurvedic herbal



Fig. 1. A nurse counsellor in Alleppey, Kerala, demonstrating soap and water washing during the LF camp.



Fig. 3. Ayurveda doctor and team leader training ASHAs and volunteers at a primary health centre at Alleppey, Kerala.



Fig. 2. A yoga therapist demonstrating the 'paschimothanasana' at a village camp at Gulbarga, Karnataka.



Fig. 4. The project was implemented in vacant staff quarters behind the community health centre in Gulbarga, Karnataka.



Fig. 5. Patient's wife assisting in a self-care procedure, performing IMLD at home as a continuation of treatment received at the community health centre.

oils, compression therapy and biomedical drugs for the care of BEPs. *Phanta*, IMLD and yoga are components of the ayurveda medical system. Details of this integrative and self-care treatment for lymphoedema are available in a previous publication.^[4]

Telemedicine

The telemedicine units were set up in AK, GK and Kasaragod. Through this system experts in the IAD suggested and monitored the treatment procedures at the two subcentres at AK and GK. The system was connected to the National Ayurveda Research Institute for Vector Borne Diseases (NARIVBD), Vijayawada, which was authorised by the funding agency to monitor the programme. Poor broadband facilities and connectivity problems seriously obstructed the regular and optimum functioning of the telemedicine units. However, 261 patients and 684 limbs benefited from telemedicine consultations.

Results

A total of 1 663 people attended skin camps and, of these, 1 008 signed on for full instruction in self-management. In concordant patients, reduction in all outcome measures was found to be statistically significant ($p=0.001$). A total of 573 patients (618 limbs) were considered concordant with treatment and 157 patients (233 limbs) were non-concordant. The concordant small limbs showed volume reduction of 45.6% ($p=0.001$) at third follow-up and non-concordant limbs reduced by 8.7% ($p=0.47$) (Fig. 6). Large limbs showed 48.9% ($p=0.000$) volume reduction in concordant patients and 3.7% ($p=0.08$) in non-concordant patients after the third follow-up. Of the concordant patients, 40% had a history of inflammatory episodes before recruitment to treatment at 3 months. This was significantly (1% level) reduced to

12.8% at 3.5 months follow-up. Of the non-concordant patients, 34.3% experienced inflammatory episodes at baseline, which was reduced to 27.9% ($p=0.29$) (not significant). BEPs were present in 83.2% concordant and 82.8% non-concordant limbs at baseline. There was significant reduction of BEPs in 82.8% limbs ($p=0.001$), while non-concordant limbs showed insignificant response after 3.5 months. There was an overall improvement in all domains of LF-specific quality of life ($p=0.001$).^[5]

Concordance, participation and counselling

The success of the programme, which expects much of its participants, can in part be attributed to family and community participation. This in turn was influenced by the provision of more-than-adequate counselling. Before admission to treatment patients attended a 30-minute counselling session, where patients and their families were given complete details of the treatment programme during a PowerPoint presentation. Counselling emphasised the care of BEPs, self-care and the need for the life-long practice of treatment and use of compression bandages. Patients, and whoever accompanied them, received counselling on admission to treatment, on discharge from treatment and during every follow-up visit, primarily to ascertain whether treatment instructions were being followed as advised. At every stage of the treatment an attendant was available to answer questions. Much of the success of the programme depends on training the team to provide counselling.

Summary

- Integrative treatment combining ayurveda, yoga and allopathy significantly improved the quality of life of lymphoedema patients in Indian villages.

- The treatment was effective in all grades of lymphoedema of any duration of illness.
- An ayurvedic doctor, a general nurse and a midwife led the locally recruited LCT, assisted by a social worker. It met the needs for chronic care of lymphoedema and controlled secondary infection to reduce inflammatory episodes.
- The study was implemented in resource-poor Indian villages.
- The interventions used ayurvedic medicines available in local markets.
- The treatment was simple and easy to administer after brief training.
- 56.8% of patients regularly continued this treatment at home.
- 15.6% of patients had poor concordance to treatment procedures.
- The reduction in symptoms attained during a supervised regimen was maintained in poorly concordant patients for 2 more months.
- The treatment has multiple components and is time consuming. Therefore, the treatment protocol needs simplification.
- This cost-effective integrative treatment protocol has adapted all the principles of primary healthcare, namely community participation, intersectoral co-ordination, appropriate technology and equitable distribution, and can be adapted globally.

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Fig. 6. Volume reduction observed in lymphoedema after 72 days.