

## Update on Ocular Leprosy

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### Numbers of People with Leprosy

The widespread use of Multiple Drug Therapy (MDT) in leprosy control programmes has resulted in a great reduction in worldwide prevalence. There is a mixed picture from country to country, so that there is still a high incidence of newly diagnosed cases in some regions, for example in northern Brazil and parts of India. At the beginning of 2000 there were approximately 640,000 cases registered for treatment with MDT, and around 680,000 had been newly detected in 1999.<sup>1</sup> More than 10 million previous leprosy patients have been released from treatment (RFT), and removed from registers. Many of them have disabilities or the potential to develop disabilities. In countries such as China and South Korea, there are many elderly people with disabilities, some still living in leprosy settlements or colonies. In West Bengal alone there are 64 such settlements.

### Leprosy and the Eye

It is recognized that there is more blindness in multibacillary (MB) patients with leprosy than in other people of the same age. This has been confirmed in a longitudinal study of leprosy (LOSOL) in India (301 patients recruited over 7 years) and the Philippines (289 patients). Severe visual impairment and blindness (less than 6/60) was 55% higher at disease diagnosis than in an age-standardised comparison group. This was due to cataract in 90%, the other main causes being lagophthalmos (failure to close the eyelids) leading to corneal opacity, and uveitis.

### Vertical Leprosy Programmes are Becoming Integrated

Because of the success in reducing the prevalence of leprosy, governments are not prepared to continue to allocate money previously given to leprosy control programmes. There is also political pressure in WHO and by some governments to declare leprosy 'eliminated'. In consequence, specialised leprosy programmes are being

closed and leprosy workers are being phased out or re-deployed. Tamil Nadu is the first state in India in which leprosy control has become fully integrated into the general health services; other countries are following the same pattern. Under these conditions there is a real danger that new cases will be missed, and disabilities will not be adequately dealt with. Therefore, guidelines for the responsibilities and training of general health workers must be rapidly developed. The eye care programme must also assume great responsibility.

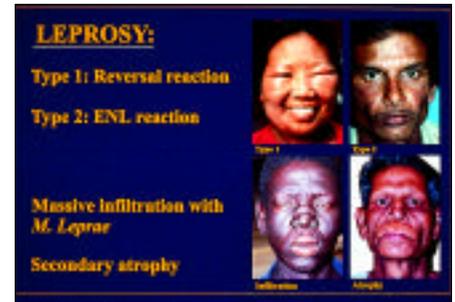
Some of the problems and opportunities associated with integration of leprosy care into Primary Health Care were identified at the Workshop.

1. A very large number of general workers will need training. For those already in service, ophthalmic assistants may be trained to do the training. For those Primary Health Care workers still in training, we must ensure that teaching about eyes in leprosy is included.
2. General workers may not welcome yet more responsibilities. It will be necessary to reduce the recommended tasks and technology to the minimum essentials.
3. Leprosy patients may be unwilling to accept these new workers and services. They may not have a choice; counselling at the time of change-over may help.
4. Organisational support will be needed at national, regional and district levels. In sub-Saharan Africa, prevention of blindness due to leprosy will, in practice, only survive within the general eye care programme. The reorganisation required as a result of the Vision 2020 initiative is an ideal opportunity to think how eye care in leprosy could be integrated. In some countries community rehabilitation workers may be involved in long term follow-up of RFT patients.
5. Under these circumstances it may be attractive for leprosy relief agencies to direct some support to general eye care programmes.

### Three Groups of Leprosy Patients

The 3 groups which need to be considered are :

- 1) At the time of diagnosis with leprosy.
- 2) During the time of treatment with MDT.
- 3) 'Cured' patients, when finished with MDT and released from treatment.



*The faces of leprosy*

*Photos: Margreet Hogeweg*

### 1. At time of diagnosis

The setting in which the decision to treat will be made in India will be the Primary Health Centre (PHC), under the supervision of the PHC Medical Officer (PHC MO). Each centre may only see 5–10 new patients a year, of whom only one may have lagophthalmos.

It was agreed that the eyes of all new patients should be examined at diagnosis – for visual acuity; for lagophthalmos, indicated by lid gap or corneal exposure on 'mild closure', as in sleep; for a skin-patch around the eye or cheek; and for red eye. The visual acuity will be taken by any paramedic, and the patient inspected by the PHC MO if anything is found. The equipment required is an E-chart, torch and ruler. The MO will assess vision: < 6/60 in either eye, lagophthalmos or a red eye, and decide whether referral to an Ophthalmologist (Asia) or Ophthalmic Clinical Officer (Africa) is indicated. A lid gap >5mm is referred for surgery. If the lid gap is 5mm or less and there is a recent history, systemic prednisolone should be started; if not recent, the patient is counselled in self-care. When a skin patch is pale, the patient receives counselling; if red and raised, steroids should be started and the patient seen every month.

### 2. During treatment with MDT

- (i) single skin lesion: seen at start of treatment only, no follow-up.
- (ii) Paucibacillary (PB) leprosy, 6 months treatment: seen at 3 and 6 months, at the same time as patient checked for ulnar nerve involvement and foot ulcers.
- (iii) MB leprosy, 1–2 years treatment: patient seen at least every 6 months, or more frequently if required by the Prevention of Disability Programme.

### 3. At the time of RFT

All patients will be educated about possible eye complications, instructed in self-care, and told to return if any



*Leprosy and cataract*

*Photo: Margreet Hogeweg*

adverse events occur. People with lagophthalmos of 5mm or less should be followed 6 monthly.

## Lagophthalmos Surgery

The indications for referral for surgery are lagophthalmos of 5mm or more; any degree of lagophthalmos if reduced corneal sensation is found by the supervisor; any degree of lagophthalmos in a one-eye patient; and for cosmetic reasons.

The aim is to narrow the lid gap and cover the cornea. There is no agreement as to the best procedure, whether tarsorrhaphy, or horizontal lid shortening, including reconstructing the canthus. Temporalis muscle transfer is not suitable for routine use.

We need to improve the type of surgery, and obtain evidence as to what is the best procedure. We also need to understand why patients are not prepared to accept this surgery.

## Cataract Surgery

In the past, because of small pupils, synechiae, iris atrophy, and the demonstration of the presence of leprosy bacteria in the iris even after a full course of MDT, Ophthalmologists have been reluctant to insert IOLs after cataract surgery. This is changing, and very good results with posterior chamber IOLs were reported at this Workshop. Apart from the improved optical results, IOLs avoid the problem of

wearing aphakic spectacles when the bridge of the nose has collapsed, or the problem of handling them with deformed hands. Some surgeons use frequent topical steroid drops or systemic steroids post-operatively to reduce the risk of post-operative inflammation.

## Conclusions

The gradual change-over from vertical leprosy programmes to an integrated programme for leprosy sufferers increases the responsibility on the staff of the eye care programmes to ensure that the patients are examined and operated on at the right time, and that general health workers are trained in leprosy eye care.

## Reference

- 1 Weekly Epidemiological Record. 2000; No 28, 14 July; 75:226-231

or [www.who.int/lep/disease/wer7528.pdf](http://www.who.int/lep/disease/wer7528.pdf)

## Recommendations

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1. It is critical that leprosy patients (during their anti-leprosy treatment and after release from treatment) are integrated into general health and eye care programmes.
2. Integration will require close collaboration between leprosy control and prevention of blindness programmes. At the national, regional and local level, strong political commitment (including professional organisations) is needed. Integration will reinforce and complement Vision 2020 initiatives and support leprosy control activities.
3. Cataract is the leading cause of blindness in leprosy affected persons and many do not have access to general eye care services. All persons affected by leprosy should have equal access to eye care services. Education of health workers (including eye care staff) is required to ensure that leprosy patients gain access to eye care facilities.
4. At the time of disease diagnosis all patients should be examined for lagophthalmos (any gap), visual acuity, the red eye, and presence of a facial skin patch. All patients with lagophthalmos, decreased vision, persistent red eye, and/or a facial skin patch in reaction should be referred by the general health worker to a higher level.

5. We recommend that visual acuity and lagophthalmos become the major indicators for monitoring disability and that corneal hypoaesthesia, corneal opacities, and uveitis (which will be recognised as one cause of a red eye) are removed from the leprosy disability grading scheme.

6. At the end of treatment patients must be educated regarding the risk of eye disease and informed that they should return for examination if they develop lagophthalmos, diminished vision, red eye, or a facial skin patch in reaction. Explicit instructions need to be given to each discharged patient as to where to go. Patients with lagophthalmos should continue to be followed up.

7. A training component that addresses the skills and activities of health workers in relation to care of eyes in leprosy should be introduced into national plans. Plans should address the needs at different levels and should include the needs of existing health workers through supplementary courses. Health workers currently in training should receive appropriate teaching through medical, nursing and paramedical curricula. In every setting with a leprosy control programme, a practical referral system needs to be clearly defined. All referral points (staff) need to be educated regarding the eye care needs of leprosy patients.

8. In settings where there are leprosy colonies/villages it is recommended that at least annual screening eye examinations and treatment are conducted. Furthermore, patients in 'care after cure' programmes

should have, as a minimum, annual eye care examinations and management.

9. Lagophthalmos surgery should be provided to patients who need it. Evaluation of the need for lagophthalmos surgery should be based on one or more of the following conditions:

- size of lid gap
- corneal exposure
- corneal hypoaesthesia
- visual acuity
- cosmetic appearance

There are a number of surgical procedures being used for lagophthalmos surgery. Research is needed to determine the best possible surgical procedures to correct the lagophthalmos and to improve functional and cosmetic outcomes of the surgery. Standardised routine monitoring of outcomes of lagophthalmos surgery is recommended. There are many barriers that prevent patients from accepting lagophthalmos surgery which need to be clearly identified; programmes need to be developed to increase uptake of lagophthalmos surgery. Finally, ophthalmologists and other relevant surgeons need to be trained in good quality lagophthalmos surgery.

10. Research shows that cataract surgery with IOL implantation, even in patients with evidence of chronic uveitis, can provide a good quality outcome. IOL implantation, where available, should be promoted among leprosy patients who need cataract surgery. The outcomes of cataract surgical services need to be routinely monitored.

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