

## Original Article

# Ocular disabilities in leprosy, Larkana District, Sindh, Pakistan

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**Abstract** *Background* Eye involvement is a common cause of disability and morbidity in leprosy patients. During the Leishmaniasis survey in the mountainous belt, leprosy patients were also checked for different eye complications.

*Objectives* The purpose of this survey was to find out the frequency and severity of ophthalmic disabilities and deformities associated with leprosy in Larkana district.

*Patients and methods* The disabilities and deformities noted were graded according to WHO criteria (1982) as grade I, II and III.

*Results* Eye complications were seen in 43.4% of leprosy patients. There were 71% males and 29% females. Both eyes were affected. Grade I disabilities were more frequent.

*Conclusion* Eye complications are quite common in leprosy patients of Larkana region. Patients' education, early diagnosis and treatment and continuous surveillance are mandatory to reduce this high figure.

### *Key words*

Ocular disabilities, leprosy.

## Introduction

Leprosy is not a killing disease but a crippling one and, if not treated early and properly, it may result in deformities. Once a patient has deformed, he/she may lose his/her job, get divorced or suffer social rejection.<sup>1</sup>

More than 40% of all leprosy cases develop eye complications if not treated at an early

stage. Eye involvement is generally more common in multibacillary leprosy than paucibacillary leprosy. This occurs either because of tissue reaction to invading *Mycobacterium leprae* e.g. madarosis, or from secondary damage to the anaesthetic part of the eye e.g. corneal ulcers, exposure keratitis etc.

The leprosy situation in Pakistan is fairly accurately known. According to estimates, there were 50300 leprosy patients in Pakistan till 2002. More than 50% of these were in proper Karachi, which is the capital city of Sindh province.<sup>2,3</sup> The reason for the highest load of leprosy cases in Karachi is the large number of refugees e.g. Indian, Bengalis, Afghanis etc. living in the city.

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Besides Karachi, there are foci of this disease in interior Sindh. The leprosy center at Larkana caters for populations of Larkana and neighbouring districts of Sindh and Balochistan provinces. During our 2002 survey, 70 children were detected among a total of 843 cases (8%), indicating that transmission is still taking place.<sup>4</sup>

The aim of this study was to determine the frequency and severity of the leprosy-related eye complications and make plans to educate and treat the patients to forestall these deformities.

### Patients and methods

During a survey in Larkana district, all the leprosy patients were screened in collaboration with a consultant ophthalmologist for eye complications. Ocular complications were graded from I to III, according to WHO criteria 1982 (**Table 1**).<sup>5</sup> Therapeutic procedures e.g. tarsorrhaphy, blepharoplasty etc. were performed and health education imparted where necessary.

### Results

Three hundred and forty five known cases of leprosy were screened. Eye involvement was seen in 150 patients (43.4%). Of these, 107 (71%) were males and 43 (29%) females. 132 (88%) had multibacillary and 18 (12%) had paucibacillary leprosy. Right eye was involved in 74 patients (49.3%), [41 (55.5%) in grade I, 20 (27%) in grade II, 13 (17.5%) in grade III]. The left eye was affected in 76 (50.6%) patients, [39(51.3%) patients in grade I, 27(35.5%) patients in grade II and

Grades	Eye complications
Grade I	Conjunctivitis, madarosis
Grade II	Blurring of vision, iritis, keratitis, lagophthalmos.
Grade III	Severe loss of vision, blindness, enophthalmos

**Table 2** Eye complications in leprosy (n=150)

Eye complications	Grade	Right eye	Left eye
Conjunctivitis	I	23	19
Madarosis	I	18	20
Blurring of vision	II	13	17
Iritis/keratitis	II	4	6
Lagophthalmos	II	3	4
Severe loss of vision	III	5	4
Blindness	III	6	2
Enophthalmos	III	2	4

10 (13.1%) patients in grade III]. **Table 2** shows different types of these disabilities.

### Discussion

In our study, ocular complications were seen in 43% of cases and blindness had developed in 13% of them. The deformities were more frequently associated with MB leprosy as compared with PB type. This might be due the fact that MB is the common type of disease in Larkana region.<sup>4</sup> Similar results have been reported by earlier researchers, as well.<sup>6,7,8</sup> Ahmad *et al.*<sup>6</sup> noted a deformity rate of more than 30% and blindness in 17%. The study by Akbar *et al.*<sup>7</sup> revealed that 67% had ocular involvement and 9% were blind. Khan *et al.*<sup>8</sup> reported a still higher figure with ocular involvement in 73% and blindness in 11%. Complications were more in MB type of disease.

All local studies showed a much higher rate of blindness as compared to international data. Thompson *et al.*<sup>9</sup> reported 2.9% of their patients to be blind and 20.7% had marked degree of visual impairment. The prevalence of blindness due to leprosy has

been variously estimated as being 4.7% in India,<sup>10</sup> 1.6% in Nigeria,<sup>11</sup> 1.3% in China,<sup>12</sup> 1.2% in Nepal<sup>13</sup> and 0.6% in Uganda.<sup>14</sup> This indicates the poor and delayed management of leprosy, a preventable cause of blindness.

In Pakistan, leprosy is a public health problem and about 30% to 40% leprosy patients face the threat of progressive and permanent blindness. leprosy patient has developed eye deformities he may loose job, get divorced or face social rejection for ever. Paramedical workers should be trained to carry out screening for eye complications in patients under MDT, or these released from treatment.

### Conclusion

Eye complications are quite frequent in leprosy patients of Larkana district. To prevent the ocular deformities and disabilities, leprosy screening and surveillance programs should include eye examination as part of routine screening especially in MB patients.

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