



**Libyan International Medical University
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Blindness in leprosy

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Abstract:

Leprosy remains one of the world's major blinding diseases and yet few ophthalmologists are aware of the spectrum of ocular complications. Cross sectional studies of the eye changes in leprosy studies of the eye changes in leprosy, have been carried out in 24 different leprosy centres throughout the world and the preliminary results are presented. They show that up to 20% of leprosy patients develop sight-threatening lesions and between 5% and 7% are blind (depending on the definition of blindness). Visual impairment in leprosy needs special consideration by leprologists and ophthalmologists, not only because much of it is preventable, but also because it is a severe burden to be added to the problems of mobility and social stigma that characterise this ancient disease.

Introduction:

Leprosy, also known as **Hansen's disease (HD)**, is a long term infection by the myobacterium leprae or myobacterium lepromatosis.^{[3][4]} Initially, infections are without symptoms and typically remain this way for 5 to 20 years.^[3] Symptoms that develop include [granulomas](#) of the [nerves](#), [respiratory tract](#), skin, and eyes.^[3] This may result in a lack of ability to feel pain, thus loss of parts of extremities due to repeated injuries or infection due to unnoticed wounds.^[2] Weakness and poor eyesight may also be present.^[2]

Leprosy is spread between people.^[7] This is thought to occur through a cough or contact with fluid from the nose of an infected person.^[7] Leprosy occurs more commonly among those living in poverty.^[2] Contrary to popular belief, it is not highly contagious.^[2] The two main types of disease are based on the number of bacteria present: paucibacillary and multibacillary.

Discussion:

'Blindness in the individual who has normal skin sensitivity is enough of a handicap, but in the one who has lost that faculty it is disastrous. Few have the resources, material, mental or spiritual, to live with it.' Margaret Brand's short statement' in her pamphlet on the care of the eye in leprosy sums up the plight of the leprosy patient with failing vision; for despite major advances in recent years in the understanding of the pathology and treatment of leprosy, ocular complications still pose the greatest single threat to patients who have a disease which is disfiguring, humiliating, relentless in its course, and yet rarely fatal on its own. Estimations of the number of leprosy sufferers in the world have always been difficult, since the official figures take no account of the many affected individuals who for some reason or other do not seek attention and remain outside medical and paramedical supervision. The Federation of

AntiLeprosy Associations (ILEP) have registered over 4 million patients, but a recent WHO report² suggests that revised estimates from some of the larger countries indicate that the numbers may well exceed 12 million if we include the potentially large reservoir believed to exist in China and its dependants, from which information is scarce, and a figure as high as 15 million has been quoted.

There is little doubt that the lepromatous form of leprosy is responsible for the major ocular complications, either in the form of chronic iritis, described by Weekeroon⁴ as the 'cause par excellence of blindness', or from the effects of facial and trigeminal nerve palsies. Indeed Harley considered⁵ that 'given enough time all patients with lepromatous leprosy will develop ocular complications'. Tuberculoid and borderline leprosy also cause ocular damage through their effects on the facial and trigeminal nerves, and all forms of the disease may develop acute iritis with complications, but it is the lepromatous patient that is most likely to have long-term visual problems which can culminate in blindness. Lepromatous leprosy is commoner in temperate climates and seems to occur more in Asian, South American, and European races rather than in Africa, with an equal balance in the Indian subcontinent. In consequence the main ocular problems are to be expected in the Far East, South America, and the more northerly parts of India and Nepal. From information gained from various ophthalmic surveys in different parts of the world and relating it to the global distribution of registered leprosy patients⁸ it is possible to arrive at some sort of estimate of the number of blind leprosy sufferers, and the figures suggest that there could be as many as 500 000 to 750 000.

British Journal of Ophthalmology, 2013.-

Ocular involvement in leprosy is estimated to be 70-75%, about 10-50% of leprosy patients suffer from severe ocular symptoms, and blindness occurs in about 5% of patients. The disease leads to many ophthalmologic symptoms and signs in the range of the eyeball itself, as well as of the bulb adnexa, ie, eyebrows, eyelids with eyelashes, and lacrimal drainage system. Especially dangerous are complications of lagophthalmos and corneal hypoesthesia, neurotrophic or infectious keratitis, and iridocyclitis and cataract formation, which may lead to significant decrease of visual acuity or even blindness. Multidrug treatment rapidly interrupts transmission of *Mycobacterium leprae* by infectious patients, but even after being completed, it does not guarantee the withholding of ocular complications.

Research Department, Instituto Lauro de Souza Lima, Bauru, Brazil, 2015..

Leprosy control programmes are highly successful. As a result, leprosy control will be more and more integrated into the general health services. The existing vertical, specialized control programmes will be dismantled. Eye complications in leprosy have decreased. This is a result of

earlier diagnosis and highly effective multidrug treatment (MDT) of leprosy, combined with timely treatment of secondary nerve damage by steroids. Most ocular morbidity is now found among elderly and disabled leprosy patients who were diagnosed before effective MDT treatment became available. Many of these patients live in leprosy settlements. Age-related cataract has become the leading cause of blindness in leprosy. The second cause of blindness is corneal opacification, mainly as a result of neglected exposure keratitis and corneal anaesthesia. The Vision 2020 Initiative prioritises cataract surgery. Leprosy patients should be actively included. Disabled leprosy patients can also benefit from screening programmes for refractive errors and the provision of spectacles and low vision aids. Determining the most feasible surgical methods for lagophthalmos surgery remains a challenge. For all health and eye care staff, training in leprosy and its eye complications is needed, as well as a change in attitude towards leprosy patients. Staff must be prepared to welcome them in the general health services.

-Department of Ophthalmology, Leiden University Medical Centre, Leiden, The Netherlands, 2016.

Conclusion:

In spite of years of research and enormous number of conferences on leprosy, the disease still remains a major medical problem. Nevertheless blindness from leprosy can be a thing of the past if an early diagnosis and appropriate treatment is undertaken. Further more, recently developed drugs hold an additional promise for improved results. In all forms of leprosy the important ocular complications are situated in the anterior part of the eye and visual impairment and blindness in the disease have four main causes :

- 1-Lagophthalmos leading to exposure keratopathy.
- 2-Corneal hypaesthesia leading to corneal ulceration.
- 3- cataract.
- 4-Acute or chronic iridocyclitis.

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