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# **Original Research Article**

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# Study of oro-facial deformities in treated leprosy patients in central India

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#### **ABSTRACT**

**Background:** Though leprosy has ceased to be a chronic disease, the impairments present at diagnosis or those which develop after diagnosis may have a lasting effect on the functioning of those who have been patients. This study is an attempt to clinically evaluate the orofacial lesions and deformities of treated leprosy patients, and see whether they have received any rehabilitation services.

**Methods:** This was a hospital based cross sectional study conducted in a tertiary health care centre at Nagpur. All treated leprosy patients coming to the Out patients department of Skin and Venereal Diseases centre of the institute were examined and details regarding rehabilitation services received by them were inquired.

**Results:** A total of 30 patients were studied of whom male and female were 15 each. Oro-facial lesions were seen in 20 patients of whom 11 were males and 9 were females. The most common lesion was in tongue (depappilated/fissured/deviated) in males and madarosis in females. Shrunken or erythematous uvula was the least common finding. Deformities of hands and feet were more common in females while deformity of eyes was more common in males. Utilization of rehabilitative services was very poor.

**Conclusions:** It can be concluded from the results that leprosy as a disease is being treated successfully but the Orofacial lesions and deformities are significant and utilization of rehabilitation is poor.

Keywords: Disability, Leprosy, Orofacial lesions, Rehabilitation

# INTRODUCTION

Leprosy is classified into two separate categories, paucibacillary and multibacillary. Extensive form of multibacillary type corresponds well to lepromatous type and exhibits ill defined, hypo pigmented macules or papules on the skin that, with time, becomes thickened. Face is a common site on involvement and the skin enlargements can lead to distorted facial appearance (Leonine facies). Nerve involvement leads to sensory

loss, which begins in the extremities and spreads to most of the body. Multi drug therapy (MDT) as formulated by the World Health Organization is a powerful and effective tool for control of leprosy and its complications.<sup>2</sup> With the start of MDT, leprosy has ceased to be a chronic disease. Leprosy as a disease can be cured. However, impairments that were present at diagnosis or those which developed after diagnosis may have a lasting effect on the functioning of those who have been patients. Leprosy patients who complete the course of MDT have to live with the disabilities caused due to

the disease process. Permanent disability of eyes, hands and feet are caused by the disease.<sup>3</sup>

Apart from the problems of disability, they have to suffer the problems related directly or indirectly to the disease/disability for example social stigma, loss of job, marital and financial problems, etc. Rao et al reported on an average, 30 per cent of the leprosy affected person's work life is lost due to disability. 4 Rehabilitation plays an important role in such circumstances. Rehabilitation can be defined as a dynamic multi-disciplinary process that often combines interventions of medical, social, educational and vocational disciplines to maintain or obtain and secure for a person, who is experiencing certain problems related to a health condition or disorder a respected and satisfying place in society.<sup>5</sup> Often, the focus in rehabilitation is on the physical aspects of rehabilitation, including surgery. In some leprosy programmes and projects this focus has been broadened with the start of 'sheltered workshops'.6 As different countries reach the statistical goal of eliminating leprosy, which means, reducing the prevalence of disease to less than one active case per 10,000 population, more attention is being directed towards the rehabilitation services.

Patients who are released-from-treatment are declared cured, but have to live with various problems like orofacial lesions. disabilities, non-availability inaccessibility to rehabilitative services, etc. In 2009, the World Health Organization (WHO) launched the enhanced global strategy for further reducing the disease burden due to leprosy for 2011-2015, under which the target became to reduce the number of new cases of leprosy with grade 2 disability (G2D) rate per 100 000 total population (G2DR) by at least 35% between the end of 2010 and the end of 2015. G2D has been proposed as an indicator instead of leprosy prevalence because it is less susceptible to operational factors such as detection delay and is a more robust marker for mapping cases of leprosy in a country. WHO expects that by using G2D as an indicator and by focusing interventions on reducing G2D, delayed detection and treatment of leprosy patients will also be reduced and so will the number of new leprosy cases in the population. In recent years under leprosy control programme more attention has been given to prevention of disability.8 Hence this study was an attempt to clinically evaluate the orofacial lesions and deformities of treated leprosy patients and see whether they have received any rehabilitation services.

#### **METHODS**

This was a hospital based cross sectional study conducted amongst 30 patients who had completed course of leprosy treatment came to the out patients Department of Skin and Venereal Diseases department in Indira Gandhi Government Medical College and hospital, Nagpur which is a tertiary health care centre in central India. The study was approved by Ethical committee of the institution. All

30 treated leprosy patients coming to the Out Patients Department of Skin and Venereal Diseases Centre of the institute were studied during July 2011 to December 2011. History regarding socio-demographic characteristics, duration since treatment completion, social problems faced by them and details regarding rehabilitation services received were recorded in predesigned, pretested proforma. Clinical examination was done to look for the orofacial lesions and disabilities present.

Disabilities were classified into three grades. The criteria are as follows:<sup>3</sup>

#### Hands and feet

- grade "0" (no anaesthesia and no visible deformity)
- grade "I" (anaesthesia but no visible deformity)
- grade "II" (visible deformity/damage present
- Eyes- grade "0" (no eye problem, no evidence of loss of vision)
- grade "I" (eye problem due to leprosy present, but vision not affected)
- grade "II" (severe visual impairement, lagophthalmous, Iridocyclitis and corneal opacity)
- Other deformities- Gynaecomastia and perforation of the palate

#### Statistical analysis

Statistical analysis was done by calculating percentages and proportions whenever necessary.

#### RESULTS

A total of thirty patients who had completed course of leprosy treatment came to OPD, of whom male and female patients were of equal number 15 each. The lowest age was 23 years and highest was 81 years. Maximum patients belonged to the age group of 30-60 years (as shown in Table 1). Maximum patients i.e. 70% had completed their treatment more than 5 years back (as depicted in Table 2). Oro-facial lesions were seen in 20 patients of whom 11 were males and 9 were females. The most common lesion was in tongue (depappilated/ fissured/deviated) in males and madarosis in females (as shown in Table 3). Next common deformity was loss of tooth/teeth which could also be due to senility. Shrunken or erythematous uvula was the least common finding. Deformities of hands and feet were more common in females while deformity of eyes was more common in males. None of the subjects was found to have grade II eye deformity (as depicted in Table 4). Other deformities like gynaecomastia and perforation of palate were not found in any subject. Utilization of rehabilitative services, or being harsh in saying, delivery of rehabilitative services was very poor. Only six subjects (20%) had received some form of rehabilitation, of which 5 were females. Of these subjects, 1 had received surgical rehabilitation, 3 had received MCR footwear, and 1 had

received benefit of Sanjay Gandhi Niradhar Yojna. Two

subjects had applied for Sanjay Gandhi Niradhar Yojna.

Table 1: Distribution of patients according to age and sex.

Age group (in years)	Male No. (%)	Female No. (%)	Total No. (%)
20–30	3 (20.0)	4 (26.0)	7 (23.0)
30–45	7 (47.0)	3 (20.0)	10 (33.0)
45–60	4 (27.0)	6 (41.0)	10 (33.0)
≥60	1 (6.0)	2 (13.0)	3 (11.0)
Total	15 (50.0)	15 (50.0)	30 (100.0)

Table 2: Distribution of patients according to duration since treatment completion and sex.

Duration since treatment completion (in years)	Male No. (%)	Female No. (%)	Total No. (%)
<2	1 (6.0)	3 (20.0)	4 (13.0)
2-5	3 (20.0)	2 (13.0)	5 (17.0)
5-10	4 (27.0)	2 (13.0)	6 (20.0)
≥10	7 (47.0)	8 (54.0)	15 (50.0)
Total	15 (50.0)	15 (50.0)	30 (100.0)

Table 3: Distribution of patients according to oro-facial lesions and sex.

Oro-facial lesions	Male (%) (N=11)	Female (%) (N=9)	Total (%) (N=20)		
Tongue (depapillated, fissured, deviated)	5 (45.0)	2 (22.0)	7 (35.0)		
Madarosis	2 (18.0)	5 (56.0)	7 (35.0)		
Saddle nose	2 (18.0)	3 (33.0)	5 (25.0)		
Loss of tooth/teeth	2 (18.0)	4 (44.0)	6 (30.0)		
Infiltration over ear lobe	3 (27.0)	2 (22.0)	5 (25.0)		
Uvula (erythematous, shrunken)	3 (27.0)	1 (11.0)	4 (20.0)		
Submucous fibrosis	3 (27.0)	2 (22.0)	5 (25.0)		

Table 4: Deformities among leprosy patients as per grade and sex.

Deformities	Grade 0		Grade I		Grade II				
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Hand	21	12	9	1	0	1	8	3	5
Feet	18	10	8	1	0	1	11	5	6
Eyes	25	11	14	5	4	1	0	0	0

Other deformities (gynaecomastia, etc.) - Nil.

#### **DISCUSSION**

In the present study depappilated/fissured/deviated tongue was the most common finding in males and madarosis in females. Deformities of hands and feet were more common in females while deformity of eyes was more common in males. Rawalani et al found that among 160 leprosy patients evaluated, 100 had depressed nasal bridge, 84 had deformities of fingers and toes; 34 had fissured tongue, 6 had uvula shrunken and 8 had oral submucous fibrosis. In their study 62.5% patients presented with characteristic facial manifestations of leprosy. Delivery of rehabilitative services was very poor.

Sarkar et al reported data from 244 interviewed new leprosy patients, which showed that 20.1% had disability, among which 11.5% had grade-1 (loss of sensation) and 8.6% had grade-2 (visible deformity) disability. Nardi et al found limitations in activities proved to be common in people affected by leprosy and were associated with low income, being female, reported major lesions, disability, disease and pain. 10

The reduced number or absence of patients exhibiting oral manifestations and disabilities of leprosy is attributed to the efficacy of the multidrug therapy carried out in recent times, in addition to the early diagnosis of the disease. However thorough oral examination should be

done in all the leprosy patients irrespective of whether treated or not. As a matter of fact, oral health goes beyond good teeth. Improvement of disabilities is achieved through the use of prostheses and orthopaedic devices, including corrective splints, as well as by corrective surgery. All these measures, which require special expertise and facilities, should be made available. In an analysis of studies on Leprosy, Srinivasan reported that 21% to 45% of all persons affected by the disease deteriorated economically.<sup>3</sup> A high proportion of this group had deformities. Yet, not all persons with deformities deteriorated economically. Conversely, some without deformities also deteriorated economically. Utilization of rehabilitative services was very poor in the patients of the present study. Such services should be accessible to the needy patients.

#### Limitations

The sample size of the present study is too small, so the findings should be interpreted with caution. Nevertheless, all the patients coming to the out patients department during the study period were included, and the findings give us an insight as to how can we improve the services being delivered through the national programme while moving towards the elimination of leprosy.

#### **CONCLUSION**

It can be concluded from the results that leprosy as a disease is being treated successfully but the Oro-facial lesions and deformities are significant and utilization of rehabilitation is poor. To make the rehabilitation services available to the needy is more important. These issues need to be taken care of.

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Institutional Ethics Committee

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