

THE STUDY OF DISABILITY STATUS OF LIVE LEPROSY PATIENTS IN KURDISTAN PROVINCE OF IRAN

Farrokh Rad¹, Ebrahim Ghaderi², Ghobad Moradi³, Hamideh Salimzadeh⁴

ABSTRACT

Objective: Leprosy is an infectious disease which may lead to disability before, during or after treatment. There have been different reports about the prevalence of disabilities in leprosy patients. This study is about the status of disabilities in live leprosy patients in Kurdistan province.

Methodology: This was a descriptive-analytic study. The live patients who were accessible and had been registered in the health care department of Kurdistan University were included. The patients whose files were incomplete, were examined and their disabilities were assessed on the basis of the WHO protocol about grading of disabilities in leprosy.

Results: One hundred eighty patients were included in this study; 116 (64.4%) were male and 64 (35.6%) were female. One hundred twenty six (70%) patients had multibacillary and 54 (30%) of them had paucibacillary leprosy. In our study 152 (84.4%) patients had developed disabilities of variable degrees. There was a significant relation between disabilities and type of leprosy ($p < 0.05$), but no relation was observed between disabilities and sex or residential areas.

Discussion: Today, the main objective of therapeutic plans for leprosy is prevention of disabilities in the patients. Prevalence rate of disabilities in the leprosy patients of Kurdistan province, was higher than those of other parts of the world which might have been due to delay in referring to healthcare centers, incomplete treatment course and having no access to medical centers in the past.

KEY WORDS: Leprosy, Epidemiology, Disability.

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1. Farrokh Rad MD,
Assistance Professor, Skin Diseases Department
2. Ebrahim Ghaderi MD,
General Practitioner,
Smart of Disease Control and Prevention Group
3. Ghobad Moradi MD, MPH,
General Practitioner and MPH,
Manager of Disease Control and Prevention Group
- 2,3: Kurdistan Province's Health Centre,
Sanandaj, Iran
4. Hamideh Salimzadeh MSPH,
Department of Diseases Control & Prevention,
1,4: Kurdistan University of Medical Sciences,
Sanandaj, Islamic Republic of Iran

Correspondence

Farrokh Rad,
Health Deputy,
Dept. of Kurdistan University of Medical Sciences,
Abidar Ave, Sanandaj,
Kurdistan - Islamic Republic of Iran.
E-Mail: dr_farokh_rad@yahoo.com

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INTRODUCTION

Leprosy is a chronic infectious disease principally affecting peripheral nerves and skin. This disease can lead to the development of disabilities and serious psycho- social impacts.¹

According to the WHO report, in 1998, leprosy had been an essential health problem in 23 countries, with a prevalence rate of more than one in 10000 people. Its prevalence in 16 of these 23 countries exceeded 3.9 in 1000.^{2,3} Leprosy has been a serious problem in many parts of the world. It was endemic in China and India up to 2000.⁴ Every year in India about four hundred thousand new cases of leprosy are detected.⁵ The mortality rate of leprosy is low. The significant point is the development of deformities and disabilities.⁶

Leprosy can affect peripheral nerves,^{7,8} leading to nerve dysfunction, before, after or during treatment.^{9,10} It seems that risk of developing deformities in the patients receiving MDT is low.¹¹ Determination of the rate of deformities and disabilities before and after treatment is a good measure to assess the efficacy of treatment programs in controlling leprosy.¹² The second report of the WHO expert committee on leprosy estimated that the risk of impairment occurring in leprosy patients was 25%.¹³ In some studies the prevalence rates of disability in leprosy patients were between 16% to 56%.¹⁴⁻¹⁶

Common deformities such as claw hand, drop foot, lagophthalmos, perforation of nasal septum, trophic ulcers in feet, are preventable by early diagnosis and proper treatment.¹⁴ In one study the estimated prevalence rate of ocular complications with impairment of vision, in leprosy patients in Nepal, was about 57%,¹⁷ while in one international study the prevalence rate of the same disability was 7.1% with a male preponderance (male: female ratio=3).¹⁸ The aim of this study was to assess the rate of disabilities in the live leprosy patients, in Kurdistan province in Iran.

PATIENTS AND METHODS

This was a cross-sectional study and included all live leprosy patients. List of the live patients was obtained from the health department of Kurdistan University Medical School. The records of the patients, in all towns of

Kurdistan province, were reviewed and the required data were collected: the types of leprosy (Multibacillary and paucibacillary) and grades of disabilities according to the WHO protocol¹² on disability grading were determined (Table-I).

Paucibacillary leprosy: Presence of 1-5 skin lesions with asymmetrical distribution and skin anesthesia.

Multibacillary leprosy: presence of more than 6 skin lesion with a more symmetrical distribution together with skin anesthesia.

Statistical analysis was performed with software (spss.12). Chi-square test was used to analyze the data.

RESULTS

Out of 180 live leprosy patients 116 (64.4%) were male and 64(35.6%) were female. The mean age of our patients was 62.9 (±16.7) years but it was 38.1 (±15.5) years at the time of diagnosis. Sixty six (36.7%) patients were from urban and 114 (63.3%) patients were from rural areas. One hundred twenty six (70%) patients had multibacillary and other 54 (30%) had paucibacillary leprosy (Table-II). Disabilities were detected in 111 (88.1%) patients with multibacillary disease and in 41(75.9%) with paucibacillary leprosy (p <0.05) (Table-III). There was a significant relationship between type of leprosy and disability rate of the extremities (Table-IV), but no such relationship was observed between type of leprosy and visual impairment. Grade-1 and Grade-2 disabili-

Table-I: Disability grading of limbs and eyes*

Grade	Hands and Feet	Eyes
0	No anesthesia, no visible deformity or damage	No eye problems due to leprosy; no evidence of visual loss
1	Anesthesia present, but no visible deformity or damage**	Eye problems due to leprosy but vision not severely affected as a result (visual acuity 6/60 or better; can count fingers at 6 metres)
2	Visible deformity or damage present ***	Severe visual impairment (visual acuity worse than 6/60; unable to count fingers at 6 meters) or lagophthalmos or iridocyclitis or corneal opacities

* The highest value of the leprosy disability grade for any part is taken as the overall disability grading of the patient. ** Includes muscle weakness. ***Includes ulceration, shortening, disorganisation, stiffness, loss of part or all of the hand or foot.

Table-II: Disability grading of limbs and eyes in multibacillary and paucibacillary leprosy

Kind of leprosy	Limbs					Eyes				
	F	M	No.	Grade1	Grade2	No.	Grade1	Grade2	Urban	Rural
Multibacillary	79	47	23	43	60	49	37	40	43	83
Paucibacillary	37	17	16	8	30	22	17	15	23	31
Total	116	64	39	51	90	71	54	55	66	114

ties of the extremities were observed in 51 (28.3%) and 90 (50%) of the patients but grade 1 and grade 2 ocular impairment were detected in 54 (30%) and 55 (30.5%) of the patients respectively (Table-IV). There was no significant relationship between sex of the patients and disability rate.

DISCUSSION

In this study the number of multibacillary cases exceeded that of paucibacillary patients, so that 126 (70%) of the patients had multibacillary leprosy. In general multibacillary leprosy is more prevalent in Asia, but the prevalence of paucibacillary leprosy is more in Africa.¹⁰ There have been different reports from different parts of the world about the prevalence rates of leprosy. For instance in Thailand the prevalence of paucibacillary and multibacillary leprosy had been 66% and 34% respectively. WHO experts estimated that 685000 new cases of leprosy (41% paucibacillary and the remainder multibacillary leprosy) had been diagnosed all over the world.¹⁰

In our study the number of males (64.4%) exceeded that of females (35.6%). In general, leprosy had been more prevalent in males than females in different studies.¹⁰ In some African countries no sex preponderance was observed but in different studies from Asian countries such as India and Philippines the number of

male patients had been more than that of the female patients.^{4,10,20-22}

In this study 152 (84.4%) patients had developed some kind of disability. There have been different reports about prevalence of disability from different parts of the world. It is likely that such differences have arisen as a result of improper technique of physical examination or mismatching the kinds of disabilities with disability grading criteria.^{23,24} The prevalence of disabilities in different studies had been 30%,¹⁴ 56%,¹⁶ 82.4%²⁵ and 67%.²⁶ In one study 73% of the patients had ocular disturbances²⁷. In another study 35-56% of the patients had some degree of nerve dysfunction at the time of diagnosis.²⁸ Blindness due to a variety of causes occurs in 3-30% of the leprosy patients.²⁹ Nerve damage is the most common cause of deformities.^{30,31} Lack of early diagnosis, delay in referring to health centers and old age are factors which contribute to the prevalence rate of disabilities.³² In one study the prevalence rate of disability was about 36% in the patients with a delay of one year or less in diagnosis of the disease, while a 4 year delay led to a prevalence rate of 81%.³² The prevalence rate of disabilities in children was about 26% but in those above 60 years of age it was 80%.³² Prevalence of deformity had been higher among the male and also old patients.²⁶ In our study prevalence rate of disability was higher than those of other studies. Low level of education, low social

Table-III: Relationship between prevalence of disability and kind of leprosy (multibacillary and paucibacillary leprosy)

Kind of leprosy	With Disability		Without Disability		Total	
	Frequency	%	Frequency	%	Frequency	%
Multibacillary	111	88.1	15	11.9	126	100
Paucibacillary	41	75.9	13	24.1	54	100
Total	152	84.4	28	15.6	180	100

P=0.03 df=1 X²=4.262

Table-IV: Relationship between percentage of disability grading and kind of leprosy (multibacillary and paucibacillary leprosy)

Kind of leprosy	Without Disability		Disability Grade 1		Disability Grade 2		Total	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Multibacillary	23	18.3	43	34.1	60	47.6	126	100
Paucibacillary	16	29.6	8	14.8	30	55.6	54	100
Total	39	21.7	51	28.3	90	50	180	100
P=0.02		df=2	X ² =7.710					

status, cultural lag, social stigma leading to a delay in referring to health care centers, lack of early diagnosis and failure to fulfill preventive and therapeutic plans, were important factors which contributed to the high prevalence rate of disability in our study. Also many patients have been treated improperly in the past before the introduction of MDT. Multi drug therapy (MDT) has reduced the number of people disabled by leprosy.³³

A more careful investigation to assess the disability status of leprosy patients requires the patients to be followed for a long period from the time of diagnosis to several years after completing the treatment course.

In one study in Brazil, 3% of paucibacillary and 11% of multibacillary leprosy patients had a Grade 2 disability at the time of diagnosis. In the patients without any disability at the onset of treatment, later, disability developed in 5% of paucibacillary and 20% of multibacillary leprosy patients.³⁴

In our study most patients were from rural areas. Low social level, cultural lag, arduous roads and inaccessibility to health care centers account for higher prevalence rate of leprosy in rural areas.

Disabilities are preventable by early diagnosis and proper treatment. Therefore proper planning for case detection and periodic examinations in newly diagnosed patients who are at the risk of developing disabilities should be regarded necessary. Also similar studies in other parts of the country are recommended. The results of such studies can be used to improve the efficacy of disability prevention programs.

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