Leprosy in Saudi Arabia, 1986–89

**M A IBRAHIM,* M N KORDY,* A H AIDEROUS†
& A BAHNASSY***

**Department of Community Medicine and Primary Health Care, College of Medicine and Allied Health Sciences, King Abdulaziz University, PO Box 6615, Jeddah 21452, Saudi Arabia; and †Ibn Sina Hospital, Ministry of Health, Hadda, Saudi Arabia*

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Summary This study on leprosy includes information obtained from the Ibn Sina Hospital, a specialized centre established 27 years ago for treatment and management of the disease in Saudi Arabia. A total of 792 patients with leprosy were reported during the period of the study (1986–89). A steady decline was observed in the number of patients reported: 432 (54.55%) were non-Saudi and 360 (45.45%) were Saudi. Patients were reported from a total of 22 different countries. The majority of the non-Saudi patients were from the Yemen, 286 (36.11%). The male-to-female ratio was 3.83:1. The age groups comprised: 133 (16.79%), 51 to 80; 575 (72.60%), 21 to 50; and 84 (10.61%), under 20 years of age. The disease was classified into five categories (Ridley and Jopling classification): 295 (37.25%), lepromatous type; 238 (30.05%), tuberculoid type; 146 (18.43%), borderline-tuberculoid type; 29 (3.66%), borderline type; and 84 (10.61%), borderline-lepromatous type.

Although the number of registered patients is decreasing, this trend does not suggest an overall decline in the disease in the country. It is recommended, therefore, that the services being provided to patients with leprosy must be integrated with the nationwide network of the Primary Health Care Centres to implement effective control and prevention, including health education for the general population. Furthermore, mutual agreements must be developed with adjacent countries to study the geographic distribution of the disease.

Introduction

In Saudi Arabia it is estimated that roughly 6000 cases of leprosy occur in the population of approximately 10 million.^{1,2} Most of the cases have been reported from the southern and western regions of the country.^{3–5} At the time this study was compiled, 2200 patients with leprosy had received treatment at the Ibn Sina Hospital in Hadda, located about 35

km from Jeddah. This Institution, established 27 years ago, is the only facility in Saudi Arabia for the treatment of leprosy.

Beginning in 1985, an infectious and communicable disease case reporting system was established by the Ministry of Health, which also required that all patients with leprosy identified elsewhere in Saudi Arabia be reported or transferred to the Ibn Sina Hospital for registration, treatment, and rehabilitation. Since then, records (including a treatment register and an individual patient file, modified from the OMSLEP recording and reporting system for patients with leprosy that provides all the necessary information for patient evaluation) have been maintained.⁶ During the study period, about 792 patients registered for treatment, rehabilitation, and follow up at the Ibn Sina Hospital.

This study includes information on the patients who entered Saudi Arabia from the southern borders (Yemen), solely for specialized treatment at the Ibn Sina Hospital. In addition, a considerable expatriate population exists in the country. Patients from this population who have developed leprosy are also reported. This study explores the implication and significance of the number of patients with leprosy in the Saudi and non-Saudi population.

Subjects and methods

The subjects of this study were all patients with leprosy reported to the Ibn Sina Hospital during the period of 1986–89. The total number of reported patients was 792, which included both sexes as well as Saudi and non-Saudi patients.

Medical records at Ibn Sina Hospital were scrutinized and information regarding age, sex, nationality, area of residents, year of registry, as well as type of disease was obtained.⁷ Although the 792 patients were reported at the Ibn Sina Hospital for the first time in the year shown, not all of them had been diagnosed during that year. Some of the patients had been diagnosed earlier elsewhere, and for various reasons had not been reported until the year in question. The majority of these previously unreported patients involved expatriates who had been admitted to Saudi Arabia with known disease. In addition, the majority of the 286 (36.11%) patients from Yemen came to Saudi Arabia for treatment and rehabilitation for their disease and deformities at the Ibn Sina Hospital. The data were collected only for the registered patients during the study period. The patients were categorized according to the Ridley and Jopling classification into five types: lepromatous, tuberculoid, borderline-tuberculoid, borderline, and borderline-lepromatous.⁷ The data were transferred to coding sheets and entered into computer files. Data were analysed using an IBM microcomputer; SPSSPC + software package was used to analyse the data.

Results

This study showed that the number of patients with leprosy registered during the last four years (1986–1989) has declined. A high of 268 patients with leprosy was reported in 1986 and a low of 158 in 1988, with an increase to 169 patients reported in 1989 (Table 1). The average number of patients admitted was 198 per year.

Of the total 792 patients reported with leprosy during 1986 to 1989 in Saudi Arabia,

Table 1. Reported cases of leprosy in Saudi Arabia (1986 to November 1989)

Year	Patients registered	
	No.	%
1986	262	33.08
1987	203	25.63
1988	158	19.95
1989	169	21.34
Total	792	100.00

Table 2. Distribution of patients with leprosy in Saudi Arabia by gender (1986 to November 1989)

Year	Male		Female		Total
	No.	%*	No.	%†	
1986	217	34.55	45	27.44	262
1987	165	27.27	38	23.17	203
1988	122	19.43	36	21.95	158
1989	124	19.74	45	27.44	169
Total	628	100.00	164	100.00	792

* Percentage of total males, 1986 to November 1989.

† Percentage of total females, 1986 to November 1989.

Table 3. Age distribution of patients with leprosy in Saudi Arabia (1986 to November 1989)

Age range (years)	No.	%
< 20	84	10.61
21-50	575	72.60
51-80	133	16.79
Total	792	100.00

628 (79.29%) were males and 164 (20.71%) were females, for a ratio of 3.83:1 (Table 2). Of these patients, 133 (16.79%) were 51 to 80 years old, 575 (72.60%) were 21 to 50 years old, and 84 (10.61%) were under 20 years old (Table 3). Of those under 20, nine (1.14%) were less than ten years old. None of the registered patients were excluded from the study.

CLASSIFICATION OF DISEASE

According to the Ridley and Jopling classification of disease, the lepromatous type had the highest number of patients 295 (37.25%) compared to the other types. Classification breakdowns for other categories were: tuberculoid type, 238 (30.05%); borderline-tuberculoid, 146 (18.43%); borderline type, 29 (3.66%); and borderline-lepromatous type, 84 (10.61%) (Table 4).

REGIONAL DISTRIBUTION IN PATIENTS WITH LEPROSY

The largest number of patients, 306 (60.47%) was from the western region. The southern region had the next largest number of reported cases, 116 (22.92%). The number of patients reported from the central region was 44 (8.69%); those reported from the northern region were 31 (6.13%); and the remaining nine (1.79%) were reported from the eastern region (Table 5). These data demonstrate that the disease may be concentrated in the south-western region of the country.

SAUDI VERSUS NON-SAUDI PATIENTS WITH LEPROSY

Classifying the patients into Saudi and non-Saudi groups, the results of this study showed more non-Saudi than Saudi patients. Of the 792 reported patients, 432 (54.55%) were

Table 4. Classification of disease in patients with leprosy reported in Saudi Arabia (1986 to November 1989)

Type of disease	No.	%
Lepromatous	295	37.25
Tuberculoid	238	30.05
Borderline-tuberculoid	146	18.43
Borderline	29	3.66
Borderline-lepromatous	84	10.61
Total	792	100.00

Table 5. Distribution of patients with leprosy in Saudi Arabia by region* (1986 to November 1989)

Region	No.	%
Western	306	60.47
Southern	116	22.92
Central	44	8.69
Northern	31	6.13
Eastern	9	1.79
Total	506	100.00

* Does not include 286 Yemeni patients.

Table 6. Source of patients with leprosy reported in Saudi Arabia, native and foreign born (1986 to November 1989)

Year	Saudi		Non-Saudi		Total	
	No.	%*	No.	%	No.	%*
1986	127	16.04	135	17.05	262	33.08
1987	95	11.99	108	13.64	203	25.63
1988	64	8.08	94	11.87	158	19.95
1989	74	9.34	95	11.99	169	21.34
Total	360	45.45	432	54.55	792	100.00

* Percentage of total patients reported (1986 to November 1989).

non-Saudi and 360 (45.45%) were Saudi (Table 6). The non-Saudi patients came into Saudi Arabia from 22 countries. The Yemenis contributed the largest number of patients reported among the non-Saudi group—286 (36.11%) of the total. The second largest group, 95 (12%), was reported from the Asian subcontinent. Lastly, 51 (6.44%) were reported from Africa (Table 7). The total number of Saudi patients declined from 127 in 1986 to 64 in 1988, then increased to 74 in 1989, whereas the non-Saudi patients declined from 135 in 1986 to 94 in 1988, then increased by one patient in 1989. The overall total demonstrates that the trend of the patients reported with leprosy during the study period was declining, with a slight increase in the number of patients reported in 1989 (Table 6).

Table 7. Distribution of patients with leprosy in Saudi Arabia by nationality (1986 to November 1989)

Country	No.	%
Saudi Arabia	360	45.45
Yemen	286	36.11
India	40	5.05
Pakistan	24	3.03
Egypt	16	2.02
Bangladesh	15	1.89
Sudan	10	1.26
Indonesia	9	1.14
Somalia	4	0.51
Burma	4	0.51
Eritrea	3	0.38
Mali	3	0.38
Sri-lanka	3	0.38
Ethiopia	3	0.38
Other	12	1.51
Total	792	100.00

Discussion

Before 1985, medical records and a case registry were not properly maintained at Ibn Sina Hospital, hence an accurate follow-up of patients was not available. A suspected diagnosis of leprosy is the only qualification for admission to the Ibn Sina Hospital. Anyone who has or is suspected of having leprosy, and comes to the hospital requesting care for an illness, is entitled to admission. This liberal admission policy applied not only to Saudi patients, but also to all expatriates, including those who are in the country on a visitor's visa or pilgrimage visa, and aliens residing in the country illegally. Any expatriate may be hospitalized for treatment, because treatment is considered to be a control measure instituted to decrease or eliminate hazards these expatriates may present to the Saudi Arabian public health.

Accurate records of the 2200 patients who received treatment at the Ibn Sina Hospital before 1986 were not available; therefore, comparisons could not be made to reflect the average annual change of reported patients with leprosy in the country. Previous studies have not demonstrated long-term comparisons.³⁻⁵ A recent report from the eastern region concluded that the disease was rare in this region.⁵ In our study, patients reported from the southeastern region remain the highest, and those reported from the eastern region the least, which is in concordance with previous reports.^{3,4}

This study showed a decline in the number of Saudi patients registered during the past four years; however, an increase is expected in the number of reported patients over the next few years. This is to be attributed to the recently established nationwide primary health services network of the Ministry of Health. It is also expected that the Ministry of Health will adopt the World Health Organisation (WHO) recommendations to integrate the primary health care service providers, and involve them in management of patients with leprosy, as well as develop awareness in the community through health education.^{8,9} The decline in the number of non-Saudi patients is due to the stringent measures the Government has taken to screen expatriate workers before issuing them with work permits to enter the country; however, a few escape detection or may not have developed the disease at the time of entry. The other category of patients is from Yemen. The Yemeni patients contribute to the largest number of patients entering the country legitimately, either as expatriate workers or specifically to seek medical treatment. Accurate data were not available on the contacts with Saudi as well as non-Saudi patients.

Conclusions

The prevalence of patients with leprosy in Saudi Arabia remains less than in the neighbouring countries. With improved health services being offered to the community through the Primary Health Care Centres of the Ministry of Health, proposed integration of the management of diagnosed cases at this level, a further decline is expected in patients being reported to the Ibn Sina Hospital. The patient registration system, therefore, must be enforced rigorously to identify new patients and their contacts to promote efficient control programmes nationwide.

Although sincere efforts are made by the personnel of the Ibn Sina Hospital to maintain contact with patients throughout the duration of their treatment, loss to follow-

up remains a disadvantage for the programme. Saudi patients may return to their town and continue receiving treatment, either at the Primary Health Care Centre or in a private medical facility, whereas non-Saudi patients may return to their country of origin.

So far, no regional or nationwide surveys have been conducted to study the magnitude of the disease in Saudi Arabia, nor are there any established programmes through the government or non-government organizations for the control of leprosy in Saudi Arabia. The recent representation of Saudi Arabia in the international activities of the WHO for the prevention and control of leprosy, however, has provided an incentive to develop such programmes in the country.

Recommendations

Based on the results of this study, it is recommended that:

- 1 A surveillance system be developed to detect patients with leprosy using the primary health care centres.
- 2 Specific guidelines be established according to the WHO requirements to integrate primary health services.

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