

Review

Review of leprosy cases in Benghazi, Libyan Arab Jamahiriya, 1994–98

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SUMMARY A descriptive study was conducted using case records from the Leprosy Clinic, Benghazi for the period 1994–98. A constant decline in the number of leprosy cases registered for multidrug treatment (MDT) was observed, from 18 in 1994 to 4 in 1998. The ratio of multibacillary to paucibacillary cases was 1.3:1. Most of the patients were young male adults who were socially and economically productive. An hypopigmented patch was the most common lesion present on easily accessible sites. Early registration, compliance with MDT and follow-up will enhance the cure rate and lead to a reduction in disability rates. Despite elimination surveillance for new leprosy cases is essential.

Introduction

Encouraged by the success of multidrug treatment (MDT), the 43rd World Health Assembly adopted a resolution to eliminate leprosy as a public health problem by the year 2000 and defined elimination as lowering the prevalence of leprosy cases to less than 1 per 10 000 population [1]. The global prevalence of leprosy at the beginning of 1997 was 1.54 per 10 000, being highest in the South-East Asian Region (4.5%), 0.28% in the Eastern Mediterranean Region and lowest in Europe (0.01%). The 16 top endemic countries contribute to 91% of the global leprosy problem. Worldwide, there are an estimated 1.15 million cases of leprosy, of which 0.9 million are registered for MDT [1].

In the Libyan Arab Jamahiriya in 1997 the number of registered cases was 145, giving a prevalence rate of 0.3 per 10 000 population, of which 14 were newly detected and 100 were on MDT [2]. Cases in the pre-MDT era seemed to be concentrat-

ed in Gharyan, El-Zawiyah, Al-Khums, Tarhunah and Misratak [3].

In the light of the World Health Organization (WHO) Global Leprosy Elimination Programme, it was proposed to assess the magnitude of leprosy through a review of registered cases in Benghazi. In addition to a patient's personal, social and clinical profile, their compliance with MDT was assessed.

Materials and methods

A descriptive study in the form of a case series was undertaken. Records of leprosy cases registered at the Leprosy Clinic, Department of Dermatology, Jamahiriya Hospital, Benghazi, which serves the north-eastern region of the Libyan Arab Jamahiriya, were analysed for the period 1994–98. Thus secondary data were used.

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Results

From 1994 to 1998 a total of 54 cases (48 males and 6 females) were registered at the clinic. The cases were diagnosed on the basis of clinical findings and/or skin smear/histological examination. Of these, 47 (87.0%) patients were Libyans (41 males and 6 females), 5 Sudanese, 1 Egyptian and 1 Indian; 47% of the Libyan patients were from Benghazi City and the remaining were from the north-eastern part of the country.

There has been a constant decline in the number of new cases from 14 in 1994 to only 4 in 1998. Table 1 shows that 25 (61.0%) males were in the age group 16–35 year, whereas 5 out of 6 females were over 35 years. About half the male patients were employed in a variety of jobs involving physical labour and about one-third of the patients were retired, unemployed or students. All the female patients were housewives.

About one-third of the Libyan patients had a history of contact with a known case of leprosy within the family. Among the male patients, the contact was either a parent or a sibling, but among females, it was a husband, a sibling or their children.

Table 2 shows that 51.1% of the patients had registered for MDT within 1 year of the appearance of the lesion, the proportion of males being lower (48.8%) than females (66.7%). A sizeable proportion of patients (34.0%) had delayed registration by 3–5 years after noticing the lesion.

The age at appearance of first lesion in the majority of patients (40.7%) was < 30 years, the proportion consequently decreased with increasing age to reach 3.7% after the age of 70 years. Common sites of the first lesion in the majority of patients were the easily accessible parts of the body: the lower limbs, upper limbs, face, chest, abdomen and back in decreasing order.

More than 75% of the patients had two or more lesions. The majority had presented with nerve involvement (51.8%), followed by those with hypopigmented skin patches (38.5%), epistaxis (25.9%) and/or nodular lesions (20.3%).

The ratio of multibacillary (MB) cases to paucibacillary (PB) cases was 1.3:1.0. All the patients were on MDT but compliance was poor in more than 50% of them. The disability rate was 16.6%, seen as joint involvement, ulcers, claw hands and oedematous legs.

Table 1 Age and sex distribution of leprosy cases in the Libyan Arab Jamahiriya, 1994–93

Age group (years)	Males		Females		Total	
	No.	%	No.	%	No.	%
16–25	15	36.6	–	–	15	31.9
26–35	10	24.4	1	16.7	11	23.4
36–45	4	9.8	1	16.7	5	10.7
46–55	6	14.6	2	33.3	8	17.0
56–65	6	14.6	2	33.3	8	17.0
Total	41	100.0	6	100.0	47	100.0

Table 2 Distribution of patients by delay between appearance of the first lesion and registration for treatment

Time gap (years)	Males		Females		Total	
	No.	%	No.	%	No.	%
<1	20	48.8	4	66.7	24	51.1
1–2	5	12.2	–	–	5	10.6
2–3	2	4.9	–	–	2	4.3
3–5	14	34.1	2	33.3	16	34.0
Total	41	100.0	6	100.0	47	100.0

Discussion

The Libyan Arab Jamahiriya is considered one of the countries with a low endemicity of leprosy. With the rapid socioeconomic development of the country, the State initiated an integrated national programme for the control of skin diseases including leprosy. Operationally, it has used the existing infrastructure of the national tuberculosis (TB) control programme (TB clinics) and has field units for the surveillance of leprosy in the country. The Benghazi Leprosy Clinic at Jamahiriya Hospital, Benghazi is the main centre for the registration and treatment of leprosy cases from the north-eastern region of the country. This is in accordance with the WHO Global Leprosy Elimination Programme to cover a larger area in countries with low endemicity [1,3].

Most of the cases are self-reported or referred from the periphery as awareness of health and medical issues is high among Libyans. In most countries in the Eastern Mediterranean Region (EMR), analysis of case records is the prime source of information for reviewing the progress of leprosy elimination [2].

Control of communicable diseases, including leprosy, was associated with improved standards of living, housing, education, sanitation and health education in many countries in Europe, in the United States of America and in Japan at the beginning of the 20th century [1,4,5]. The Libyan Arab Jamahiriya has witnessed a similar reduction in the prevalence of leprosy with its rapid economic growth in the early 1970s. In addition, the national programme (long before the declaration of MDT by WHO) had incorporated the use of rifampicin (450 mg per day for 3 weeks) or clofazimine (100 mg every other day for 6 months) and lifelong dapson (100 mg per day) in the treatment of lepromatous leprosy [6].

Another explanation for the low endemicity of leprosy in the Libyan Arab Jamahiriya is the BCG vaccination programme of all neonates since 1968. A varying degree of such protection has been observed in many countries using different study designs; from 20% to 30% in India, Myanmar and Malawi to more than 50% in Venezuela and 80% to 90% in Uganda and Brazil [1,3,6-8].

The number of cases reported in Benghazi has reduced steadily over the years from 209 in 1983-93 to 47 during 1994-98. Thus, the nation has achieved the goal of leprosy elimination (prevalence < 1 per 10 000 population), and with 145 registered cases for MDT in the country at the beginning of 1997 has actually achieved a lower prevalence of 0.3 per 10 000 population. Other countries in the EMR that have eliminated leprosy are Egypt, Islamic Republic of Iran, Morocco, Pakistan, Saudi Arabia and Republic of Yemen [1,2].

A history of contact with a case of leprosy was seen in 34% of the patients, which is higher than earlier reports from the same centre (16.8% during 1972-96). History of contact in the family is a recognized risk factor, and more so for multi-bacillary type of leprosy in Malawi, Sudan, Turkey and the Republic of Yemen [9-12]. A preponderance of manual workers among the patients might reflect their working/living conditions, personal hygiene and chance of infection from a colleague and/or the environment.

Age at onset for the first lesion was 16-62 years with an average of 35 years. An earlier review from the same clinic had shown more extremes of age at onset ranging from 6 years to 85 years [10]. The duration of the disease before presenting for registration and MDT was 1 year in 51.1% of cases and 3-5 years in 34.9 % of cases, which reflects a delay in seeking health care possibly due to the persisting social stigma

associated with leprosy. In Turkey, the mean duration of the disease in 25.9% of leprosy cases was 13.3 years [11]. The delay could be reduced by strengthening health education and awareness campaigns aimed at decreasing the stigma of leprosy. The age of more than half the patients in the present study was 35 years or less, which is the productive period of life when the patients have various family responsibilities. A similar trend was observed in the Republic of Yemen, however a higher average age of 50 years was seen in Turkey [11,12].

The ratio of MB to PB leprosy cases was 1.3:1, a remarkable reduction from that during the 1983–93 period, which was 3:1. In the Republic of Yemen, the ratio has been reported as 3:1, whereas in Turkey it is very high, 9.5:1. The difference may be due to a higher affinity for lepromatous leprosy among Caucasians (Turkish) compared to others [1,11,12]. Early detection and MDT treatment would further reduce the ratio of MB:PB disease.

More than 75% of patients had two or more lesions at the time of registration, which reflects a delay in registering resulting in a delay in treatment. Similar delays in registration and MDT have been reported from Malawi, Sudan, Turkey and the Republic of Yemen. A reduction in such delays through intensive health education has been demonstrated in Thailand [11–14].

Most patients were male (88.8%), and most of them had lesions on sites that could be easily noticed by themselves, spouses, family members or friends: lower limbs, upper limbs, face, chest and abdomen in decreasing order. With proper health training programmes, most people can be taught to suspect leprosy if they see a hypopigmented patch or nodules and to come and register for MDT early. Other common findings in our study were nerve thickening, epistaxis and loss of eyebrows [1–3].

All the patients were on MDT but only 40.7% had regular treatment and follow-up treatment. National MDT coverage for Libyan Arab Jamahiriya (69%) is also lower than that of the rest of EMR (97%). The coverage could be enhanced to more than 90% by involving community leaders in the programme [1,2,14].

The disability rate in our study was 16.6% of patients, with disabilities being joint involvement, claw hands, ulcerated nodules and oedematous legs. A similar disability rate has been reported from Malawi, but a very high rate has been reported from Turkey (75%) and the Republic of Yemen (50%). In Thailand, the disability rate has been brought down drastically through early detection, registration and MDT using health education to allay fear and to dispel the stigma of leprosy [11–13].

Conclusion

The target of the elimination of leprosy as a public health problem has been achieved on time in the Libyan Arab Jamahiriya mainly through MDT, health education and the overall socioeconomic development of the country. A small number of registered cases needs to be closely supervised to ensure optimum coverage and compliance with MDT under the Global Programme of Leprosy Elimination. Cured cases with residual disability will continue to receive rehabilitative care.

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References

1. WHO Expert Committee on Leprosy: seventh report. Geneva, World Health Organization, 1998 (WHO Technical Report Series, No. 874).
2. Action Programme for the Elimination of Leprosy: status report, 1997 update. Geneva, World Health Organization, 1997.
3. Park JE, Zaheer M, Hekmat A. A short textbook on community medicine. Tripoli, Libyan Arab Jamahiriya. Al-Fateh University, 1982.
4. Ponnighaus JM et al. Extended schooling and good housing conditions are associated with reduced risk of leprosy in rural Malawi. *International journal of leprosy and other mycobacterial diseases*, 1994, 62(3):345-52.
5. Ponnighaus JM. Leprosy. The beginning of an end to a public health problem. *Dermatologic clinics*, 1995, 13(3):525-36.
6. Brown SG. *Leprosy in Libya. A guide to its early detection and management for medical practitioners*. Libyan Arab Jamahiriya, Ministry of Health, 1975.
7. Convit J et al. BCG vaccination protects against leprosy in Venezuela: a case-control study. *International journal of leprosy and other mycobacterial diseases*, 1993, 61(2):185-91.
8. Randomized controlled trial of single BCG, repeated BCG or combined BCG and *Mycobacterium leprae* vaccine for prevention of leprosy and tuberculosis in Malawi, Karonga Prevention Trial Group. *Lancet*, 1996, 348:17-24.
9. Fine PE et al. Household and dwelling contact as risk factors for leprosy in northern Malawi. *American journal of epidemiology*, 1997, 146(1):91-102.
10. Ben Amr A, Singh M, Orfi A. *Leprosy in a Benghazi clinic: a 10-year retrospective study*. Paper presented at the IVth Jamahiriya Congress on Medical Sciences, Benghazi, Libyan Arab Jamahiriya, 1998.
11. Cakiner T et al. The extent of leprosy-related disabilities in Istanbul, Turkey. *Leprosy review*. 1997. 68(1):43-9.
12. Mekhlafi GA, El-Qubati Y. Retrospective analysis of 194 leprosy cases in the Republic of Yemen. *Indian journal of leprosy*, 1996, 68(3):227-34.
13. Smith TC, Richardy JH. Leprosy trends in northern Thailand: 1951-1990. *Southeast Asian journal of tropical medicine and public health*, 1993, 24(1):3-10.
14. Ahmed KM, El-Tahir MS. The role of village leaders in the implementation on MDT for leprosy, Sudan. *Leprosy review*, 1996, 67(1):39-46.