A descriptive study of leprosy patients from Embilipitiya

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Abstract

According to the national figures, 2178 new cases of leprosy were reported in 2011 of which 25 (1%) were from Embilipitiya area, making it one of the leprosy pockets in Sri Lanka.

A study was done at the Skin Clinic, Embilipitiya to collect data on leprosy patients' epidemiology, clinical presentation, and treatment and also to assess the patients knowledge about the disease. The aim was to understand the disease pattern in the area and to identify the obstacles in prevention of transmission of leprosy in Embilipitiya.

Method: Data was collected after informed consent using a questionnaire.

Results: Of the 90 patients, 69 responded. 60% of the patients had a lag period of more than 6 months to seek treatment. All patients had hypopigmented patches at presentation and 55% presented with a single patch. 29% of the patients showed features of a reaction at presentation. 68% of the patients were on MB treatment. 80% of them did not suspect that they had leprosy while 87% did not know how the disease was caused. However 55% knew that leprosy is a curable disease.

Conclusions: Hypopigmented patches are the commonest presentation of leprosy among the patients in Embilipitiya.

Lack of awareness and late presentation may be the key factors in transmission of leprosy in the area.

Introduction

Leprosy is a chronic granulomatous disease affecting the skin and the peripheral nerves. It is caused by a slow growing obligate intracellular bacterium, *Mycobacterium leprae*. In the pre antibiotic era leprosy led to permanent disability in a significant number of infected patients. Introduction of the Multi Drug Therapy (MDT) changed the picture and permanent disability can be prevented with timely intervention[1].

Sri Lanka was one of the first countries in South Asian region to eliminate leprosy as a public health problem at the national level. This goal was achieved in 1995, twelve years after the introduction of MDT to the country, when the prevalence rate was less than 1 case per 10,000 people[2]. However, even after 17 years from that achievement we have still not eradicated the disease completely and a number of leprosy hotspots remain[2]. According to the national figures 2178 new cases of leprosy were reported in 2011[3] and out of that 25 were from Embilipitiya MOH area, making it as a leprosy prevalent area of Sri Lanka.

Apart from the long incubation period, late presentation due to lack of knowledge and social stigma may still contribute to the persistency of the disease in these areas as shown by the studies done in other parts of the world[4,5].

Route of transmission for leprosy is believed to be the respiratory route. Close contact with an untreated multi bacillary leprosy patient carries high risk of developing leprosy. In a study done in Sri lanka, 49% of the contacts of new patients were found to have Leprosy[6]. This finding stresses the importance of contact tracing in detecting new cases.

MDT plays a vital role in managing leprosy patients. However during day to day practice the clinicians come across increasing number of problems in the multi drug regime due to adverse effects of drugs and treatment failure. Experience on these matters has to be shared to improve the final outcome of leprosy management. Accordingly improvement in data collection needs to be considered to address these issues.

A survey aiming at collection of data on epidemiology, history and clinical presentation, treatment and patient awareness about the disease may help to overcome these problems and to understand the disease pattern in the area. It will also help to identify the obstacles in prevention of transmission of leprosy in the Embilipitiya area.

General objectives

1. To describe epidemiology, clinical presentations and drug treatment of leprosy patients attending the Dermatology Clinic at the Base Hospital Embilipitiya.

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2. To assess the knowledge about the disease from the leprosy patients attending the Skin Clinic at the Base Hospital, Embilipitiya.

Specific objectives

i. To describe the demographic data of leprosy patients attending the Dermatology Clinic at the Base Hospital, Embilipitiya.

ii. To describe the history and the clinical presentation.

iii. To describe the drug treatment including complications of treatment.

iv. To assess patients' awareness and knowledge of the disease.

Methodology

Study design: Descriptive study.

Study setting: Dermatology Clinic at the Base Hospital, Embilipitiya.

Study population: Leprosy patients diagnosed and/or followed up at the Dermatology Clinic at the Base Hospital, Embilipitiya from 2010 to 2012.

Method and data collection: Patients attending the skin clinic during the study period were recruited after taking informed written consent. Contact details of past patients diagnosed with leprosy were collected from the individual patient form (blue copy) maintained by the pharmacist at the Hospital. These patients were contacted through post cards and telephone calls and explained about the survey. Those who were willing to participate were recruited. Demographic data, details about the history of disease, clinical presentation, treatment and its complications and patient awareness were collected using a questionnaire. The questionnaires were filled during an interview with the patients, by the medical officers attached to the Dermatology Clinic. Patients' clinic records and details in the individual patient form were also taken into consideration when filling the forms.

At the end of the study, all the collected data were evaluated and summarized.

Ethical clearance: Obtained from the National Hospital Ethical Committee.

Results

The study population was 90 and out of them 69 patients (76.77) responded. According to the data obtained from the responders 36 (52%) were females and 33 (48%) were males. The age ranged from 6 years to 79 years with mean value of 37.5 years. The time period the patients took to present to a health care provider after noticing the skin lesions is shown in figure 1. Figure 2 illustrates to whom the patients initially presented. Three patients (4%) gave a previous history of Hansen's disease. All 3 of these patients have completed treatment on the previous occasion. Thirteen of our leprosy patients (19%) either had a family history or a contact history of leprosy.

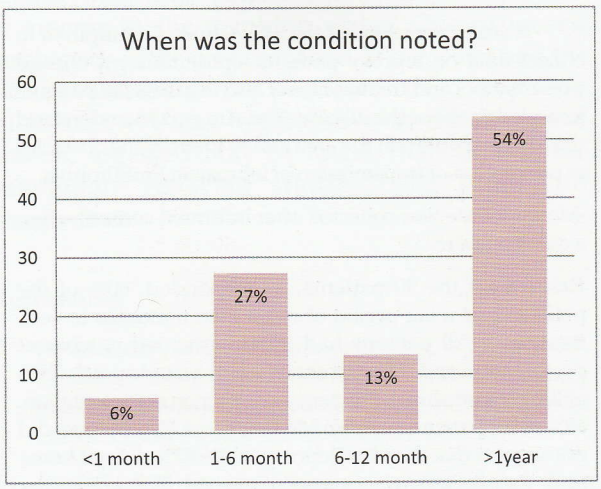

Figure 1.

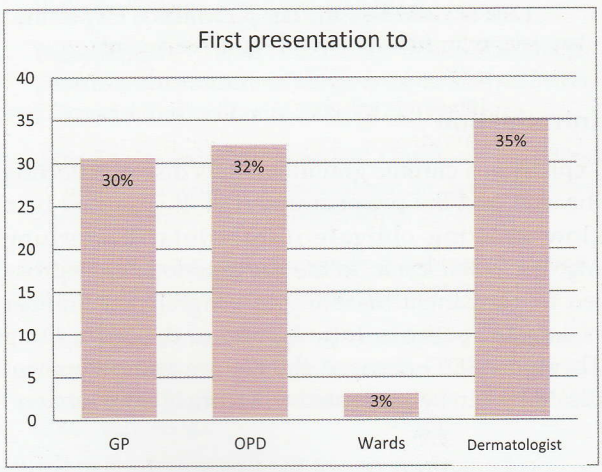

Figure 2.

Hypopigmented patches were the commonest clinical presentation with 55% of them presenting with a single patch (Table 1a). Anaesthetic or hypoanaesthetic patches were noted in 55 (80%) of all cases of leprosy. Erythematous skin lesions were seen only in a minority (15%) of leprosy patients (Table 1b). It is interesting to note that 25% of our

study population presented for the first time to a medical officer with either type 1, type 2 or mixed reaction (Table 1c).

Table 1. Clinical presentation

a. Hypopigmented patches on the skin

1		*2-5*	*> 5*
<10 cm	>10cm		
20 (29%)	18 (26%)	11 (16%)	20 (29%)

b. Erythematous nodules/plaques on the skin

Yes	*No*
10 (15%)	59 (85%)

c. Reaction

Type I	*Type II*	*Mixed*
14 (20%)	3 (4%)	1 (1%)

Majority of the patients (70%) taking treatment at Embilipitiya were on multi bacillary (MB) drug treatment while 4% had to continue treatment for more than 1 year (Figure 3). Four of our study population had complications to MDT namely dapsone hypersensitivity syndrome. The defaulter rate was 4% (3 patients).

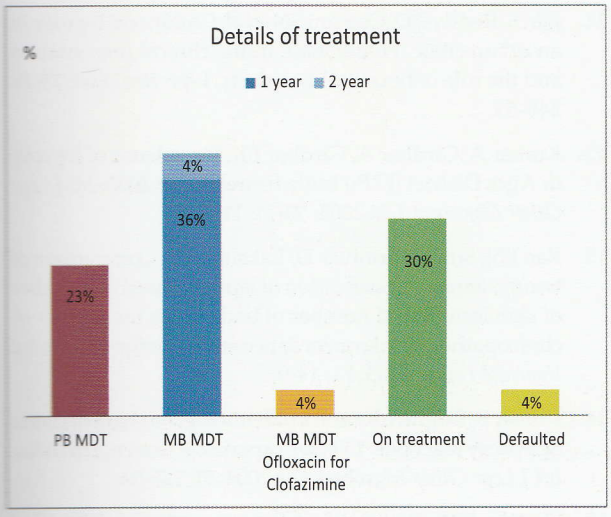

Figure 3.

In general, the patient awareness of the disease was poor as 80% of the study population (55 patients) was unaware that they had leprosy. Further 89% did not know the aetiology of the disease. In contrast, patients had a better knowledge regarding the treatment as 55% believed it is a curable disease (Table 2a). 46% knew leprosy is a communicable disease (Table 2b).

Table 2. Patient awareness/ knowledge

a. Can it be cured?

Yes	*No*	*Don't know*
38 (55%)	6 (9%)	25 (36%)

b. Whether it is communicable?

Yes	*No*	*Don't know*
32 (46%)	10 (15%)	27 (39%)

c. Which of the following features you suspect as leprosy?

a.	Hypopigmented patches	17 (25%)
b.	Hypopigmented anaesthetic patches	14 (20%)
c.	Erythematous nodules	7 (10%)
d.	Numbness	2 (3%)
e.	Don't know	39 (57%)

Discussion

Research on leprosy has been done extensively in countries such as India and Brazil where the disease prevalence is still relatively high. Comparatively Sri Lanka seems to be lagging behind in this aspect.

Studies done in India and Egypt shows slight male preponderance among the adult leprosy patients[7,8]. But in our study it was almost the same. Leprosy can occur at any age but it is the young adults that are affected mostly[9]. According to Reham Ezz El-Dawela *et al*, mean age of patients at diagnosis was 34 years while in this study it is 37.5 years. In Sri Lanka school medical inspections have led to increased detection of child cases of leprosy[10]. These epidemiological observations have not been explained so far.

Our study shows that a large no of patients from the Embilipitiya area (67%) waited for more than 6

months to seek treatment. This could be taken as a reason for the high prevalence. As majority of leprosy patients initially presented to their GP or OPD (62%), primary care doctors should be able to suspect leprosy and refer them for specialized management. Our study indicating 19% of leprosy patients having a family or contact history of leprosy, stresses the importance of contact screening.

Clinical presentation of leprosy can vary from an asymptomatic skin patch to deformity including leonine face. Sri Lanka and many other countries use much simpler WHO clinical classification rather than Ridely-Jopling system for therapeutic purposes. Pattern of clinical presentation and its relationship to other factors such as age, sex, complications and time since the onset have been studied in detail[11-13].

In the Embilipitiya area, hypopigmented anaesthetic patches were the commonest clinical presentation. A fair number of patients had a single large hypopigmented patch for which, MB treatment was indicated. Similarly lepra reactions and risk factors for reactions have been studied in some research papers[14]. With our study showing 25% of patients initially presenting with reactions, a good knowledge of symptoms and signs of lepra reactions is vital especially for primary care medical practitioners.

Introduction of the MDT may be the single most important factor in the battle against leprosy. But MDT has its own problems such as reactions, relapses and emerging multi drug resistance[15]. According to a research done in India adverse effects had been observed in 45% of the study population and Dapsone was responsible for most of it[16]. A comparable study done in Brazil revealed similar results and concluded that adverse effects of MDT was more frequent than previously described, resulting interruption of treatment[17]. Studies done on this aspect is lacking in Sri Lanka. Hence, in this study we addressed the details and complications of MDT faced by our population so that these figures could be compared with that of other countries. However this survey indicates a relatively low percentage of side effects to MDT.

The knowledge on leprosy, its stigma and other socio economical factors are inseparable from the late presentation and its consequences[18,20]. Late presentation and non compliance are serious problems for any anti leprosy program and identification of factors responsible for these is vital to improve the quality of program. This study indicates that the awareness and knowledge about leprosy among patients in Embilipitiya are poor which may be a reason for the high disease prevalence in the area. It would have been ideal if the study had screened the family members of the patients.

References

1. Britton WJ, Lockwood DN. Leprosy. *Lancet*, 2004; **363**: 1209.
2. WHO Goodwill ambassador's newsletter for the elimination of leprosy, 2010; **44**: 2-3.
3. World Health Organization. Global leprosy situation. WHO, *Weekly Epidemiology Record* 2012; **87**: 320.
4. Meima A, Smith WCS, Oortmarssen VGJ, *et al.* The future incidence of leprosy: a scenario analysis. *Bull WHO* 2004; **82**: 373-80.
5. Chalise SC. Leprosy disease in Nepal: Knowledge and non compliance of patients. *J Nep Med Association* 2005; **44**: 39-43.
6. Madarasingha NP, Senaviratne JKK. A study of household contacts of children with leprosy. *Ceylon Med J* 2011; **56**: 112-4.
7. El-Davela REE, Mohomed AS, Yousef F. Analysis of newly detected leprosy in Sohag Governorate, Upper Egypt, 2004-2008. *Lep Rev* 2012; **83**: 71-9.
8. Atre SP, Rangan SG, Shetty VP, *et al.* Perceptions, health seeking behaviour and access to diagnosis and treatment initiation among previosly undetected leprosy cases in rural Maharashtra, India. *Lep Rev* 2011; **82**: 222-3.
9. Nigam KP, Sehgal U, Ramesh V, Misra RS. Age of onset of leprosy. *Indian Dermatol Venereol Leprol* 1990; **56**: 213-5.
10. Somathunga LC. 1996 status of leprosy Sri Lankan experience. *Jpn J Lepr* 2000; **69**: 143-6.
11. Jain S, Reddy RD, Osmani SN, *et al.* Childhood leprosy in an urban clinic, Hyderabad, India: clinical presentation and the role of household contacts. *Lepr Rev* 2002; **73**(3): 248-53.
12. Kumar A, Girdhar A, Girdhar BK. Prevalence of leprosy in Agra District (U.P.) India from 2001 to 2003. *Int J Lepr Other Mycobact Dis* 2005; **73**(2): 115-21.
13. Rao PN, Sujai S, Srinivas D, Lakshmi TS. Comparison of two systems of classification of leprosy based on number of skin lesions and number of body areas involved —A clinicopathological concordance study. *Indian J Dermatol Venereol Leprol* 2005; **71**: 14-9.
14. Kumar B, Dogra S, Kaur I. Epidemiological characteristics of leprosy reactions: 15 years experience from north India. *Int J Lepr Other Mycobact Dis* 2004; **72**:125-33.
15. Gautam VP. Treatment of leprosy in India. *J Postgrad Med* 2009; **55**: 220-4.

16. Singh H, Nel B, Dey V. Adverse effects of Multi-drug therapy in leprosy, a two years' experience (2006-2008) in tertiary health care centre in the tribal region of Chhattisgarh state (Bastar, Jagdalpur). *Lepr Rev* 2011; **82**: 17-24.

17. Deps PD, Nasser S, Guerra P, *et al.* Adverse effects from Multi-drug therapy in leprosy: a Brazilian study. *Lepr Rev* 2007; **78**: 216-22.

18. Chalise SC. Leprosyn disease in Nepal: Knowledge and non-compliance of patients. *J Nep Med Assoc* 2005; **44**: 39-43.

19. Peters ES, Eshiet AL. Male-female (sex) differences in leprosy patients in south eastern Nigeria: females present late for diagnosis and treatment and have higher rates of deformity. *Lepr Rev* 2002; **73**(3): 262-7.

20. Kireet A, Sethi A, Kamal A, *et al.* Socio-demographic profile of leprosy patients in two districts of western Uttar Pradesh. *J Commun Dis* 2007; **39**(1): 45-50.