

## New cases and types of leprosy in Interior Sindh: An analysis of 3 years (2012-2014)

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**Abstract** *Objective* To evaluate the new cases and clinical types of leprosy in interior Sindh.

*Methods* Data analysis and evaluation of 3-year record of leprosy centers/clinics in Interior Sindh.

*Results* Of total 238 new registered cases, 98 (41%) were diagnosed after a delay of 1 year. The types of disease found were tuberculoid 59 (25%), borderline tuberculoid 100 (42%), borderline 13 (5%), borderline lepromatous 53 (22%) and lepromatous lepromatous 13 (5%) cases. Multibacillary cases were 179 (75%) and paucibacillary 59 (25%).

*Conclusion* The 3-year analysis of Interior Sindh shows endemic regions of leprosy in Pakistan which will help in devising strategy for an effective leprosy control program.

**Keywords**

Leprosy, analysis, Interior Sindh.

### Introduction

Leprosy (Hansen's disease) is a slowly progressive infection caused by *Mycobacterium leprae* that mainly affects the skin and peripheral nerves and results in disabling deformities.<sup>1</sup>

According to WHO report of 2004 there were 407,791 new cases diagnosed of leprosy.<sup>2</sup> It continues to be an important health problem world wide.<sup>3</sup> Its prevalence in Pakistan is estimated to be 0.05/10,000, and incidence is estimated as 0.05 and 0.3, respectively.<sup>4</sup> The pattern of disease ranges from tuberculoid

(paucibacillary) characterized by relatively few (not more than 5) skin lesions with marked cell mediated response to lepromatous (multibacillary) form which exhibits multiple lesions and little cell mediated immunity to *M. leprae*.<sup>5</sup> Nerve damage may occur early in tuberculoid form but tends to be more insidious in lepromatous leprosy.<sup>6</sup> Acute inflammatory response to *M. leprae* called as leprosy reaction also occurs which can result in marked nerve damage and subsequently limb disability and deformity.<sup>7</sup> More than one third of all lepromatous patients face the threat of permanent and progressive physical and social disability.<sup>8</sup> One of the difficulties in properly assessing, monitoring and maintaining the leprosy problem is that enumeration of cases in many developing countries is incomplete or irregular.<sup>9</sup> Keeping the fact in view we present an analysis of 3 years (2012 to 2014) of new

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cases and clinical types of leprosy attended and registered at centers/ clinics of leprosy located in districts of Interior Sindh.

### **Methods**

The data of this study were collected from leprosy centers/clinics working in districts of interior of Sindh through their District Leprosy Control Officer. The records of all new registered cases at centers were evaluated. The descriptive information was studied which included patients name, age, sex, duration, type and diagnosis of lesion. The diagnosis was clinical by cardinal signs of leprosy and supported by acid-fast bacilli in slit-skin smear or histopathologic diagnosis of biopsy specimens as recommend by WHO.<sup>3,12</sup>

### **Results**

238 new cases of leprosy were registered at leprosy centers/clinics located in districts of Interior Sindh during 3 years (2012 to 2014). Out of 238 cases the adult males were 104 (44%) and adult females were 106 (44%). Among child cases males were 14 (6%) and females were 14 (6%). Out of total cases, 98 (41%) were delayed diagnosed after 1 year. Regarding types of leprosy, tuberculoid cases were 59 (25%), borderline cases were 100 (42%), borderline cases were 13 (5%), borderline lepromatous cases were 53 (22%) and lepromatous leprosy cases were 13 (5%). The multibacillary cases were 179 (75%) and paucibacillary cases were 59 (25%), as shown in **Table 1**. The year wise data and analysis is shown **Table 2, 3** and **4**, respectively.

### **Discussion**

In any retrospective study, the researcher is at the mercy of the available record. The files of an infectious disease like leprosy might be more

complete and reliable than those of other illnesses as it is essential to have an effective leprosy control program.<sup>10,11</sup> The chain of leprosy centers/clinics spreads throughout the country including the districts of Interior Sindh and the area is considered to be one of endemic region for leprosy in Pakistan.

The early diagnosis, registration and compliance with multiple drug therapy has led to reduction of the disease.<sup>12</sup> The centers/clinics of leprosy working in interior Sindh play an important role in diagnosis, registration and treatment of the disease, the information and record of these centers is helping in strategic plan for control of the disease in the region. In this study we had 238 patients of leprosy comprising 104 males, 106 female adult cases while 28 were children. Among these all cases, 98 were delayed diagnosed cases after 1-year period. This observation is similar to those of other studies.<sup>11,13,14</sup> The proportion of children below 15 years was an average 12% as new cases in this study. However, the age distribution of a population plays an important role in there figures.

The general data on leprosy often face problems in reliability as a result of missed cases, different policies for special groups and difficulties in diagnosis. This study describes the data of analysis of leprosy in various districts of Interior Sindh collected by trained technical staff of leprosy control program, who examined, registered and treated the new cases that helps to reach the WHO elimination goal for leprosy. Further work in this regard will be helpful and more detailed analysis required for the strategies to control of the disease by the public and private organizations of the country.

**Table 1** New Registered cases and Types leprosy in Districts of interior Sindh during 2012 to 2014.

<i>Leprosy Clinic / Centre</i>	<i>Jamshoro</i>	<i>Hyderabad</i>	<i>Thana Bula Khan</i>	<i>Kotri</i>	<i>Thatta</i>	<i>Dadu</i>	<i>Mirpur Khas</i>	<i>Badin</i>	<i>Sanghar</i>	<i>Nawabshah</i>	<i>Sukkur</i>	<i>Khairpur</i>	<i>Larkana</i>	<i>Shikarpur</i>	<i>Jacobabad</i>	<i>Kandhkot</i>	<i>Total</i>
New Cases	24	24	12	10	03	24	09	02	07	12	24	08	27	14	12	26	238
Male (Adult)	11	08	06	03	02	05	05	02	05	05	11	04	16	07	07	07	104
Female (Adult)	11	15	06	05	01	12	04	--	01	06	10	02	10	06	04	13	106
Male Child	01	--	--	--	--	01	--	--	01	--	03	02	01	--	--	05	14
Female Child	01	01	--	02	--	06	--	--	--	01	--	--	--	01	01	01	14
Delayed diagnosis (after 1 year)	16	11	03	03	01	03	03	01	01	02	11	07	10	09	02	10	98
Tuberculoid tuberculoid (TT)	03	11	03	06	01	12	01	--	01	04	03	01	04	02	01	06	59
Borderline tuberculoid (BT)	11	04	06	03	01	10	01	--	--	02	05	06	13	05	07	16	100
Borderline borderline (BB)	01	--	--	01	--	--	02	01	03	--	02	--	01	01	--	01	13
Borderline lepromatous (BL)	08	05	03	--	01	02	05	01	03	06	02	01	07	05	01	03	53
Lepromatous lepromatous (LL)	01	05	--	--	--	--	--	--	--	--	02	--	02	01	02	--	13
Multibacillary (MB)	21	14	09	04	02	12	08	02	06	08	21	07	23	12	10	20	179
Paucibacillary (PB)	03	10	03	06	01	12	01	--	01	04	03	01	04	02	02	06	59

**Table 2** New registered cases and types leprosy in districts of Interior Sindh during 2012.

<i>Leprosy Clinic / Centre</i>	<i>Jamshoro</i>	<i>Hyderabad</i>	<i>Thana Bula Khan</i>	<i>Kotri</i>	<i>Thatta</i>	<i>Dadu</i>	<i>Mirpur Khas</i>	<i>Badin</i>	<i>Sanghar</i>	<i>Nawabshah</i>	<i>Sukkur</i>	<i>Khairpur</i>	<i>Larkana</i>	<i>Shikarpur</i>	<i>Jacobabad</i>	<i>Kandhkot</i>	<i>Total</i>
New Cases	12	8	4	1	1	14	2	1	--	3	3	3	13	7	5	8	85
Male (Adult)	6	2	4	--	1	2	1	1	--	2	1	1	6	3	1	3	34
Female (Adult)	5	6	--	--	--	10	1	--	--	1	1	1	7	3	3	4	42
Male Child	1	--	--	--	--	--	--	--	--	--	1	1	--	--	--	1	4
Female Child	--	--	--	1	--	2	--	--	--	--	--	--	--	1	1	--	5
Delayed diagnosis (after 1 year)	9	6	2	--	--	5	1	--	--	1	1	3	3	4	1	3	39
Tuberculoid tuberculoid (TT)	2	1	--	1	--	7	1	--	--	1	1	--	2	1	1	1	19

Borderline tuberculoid (BT)	3	2	2	--	--	5	--	--	--	--	1	2	6	3	4	7	35
Borderline borderline (BB)	1	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	2
Borderline lepromatous (BL)	6	2	2	--	1	2	1	1	--	2	--	1	5	3	--	--	26
Lepromatous lepromatous (LL)	--	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3
Multibacillary (MB)	10	7	4	--	1	7	1	1	--	2	2	3	11	6	4	7	66
Paucibacillary (PB)	2	1	--	1	--	7	1	--	--	1	1	--	2	1	1	1	19

**Table 3** New registered cases and types leprosy in districts of interior Sindh during 2013.

<i>Leprosy Clinic / Centre</i>	<i>Jamshoro</i>	<i>Hyderabad</i>	<i>Thana Bula Khan</i>	<i>Kotri</i>	<i>Thatta</i>	<i>Dadu</i>	<i>Mirpur Khas</i>	<i>Badin</i>	<i>Sanghar</i>	<i>Nawabshah</i>	<i>Sukkur</i>	<i>Khairpur</i>	<i>Larkana</i>	<i>Shikarpur</i>	<i>Jacobabad</i>	<i>Kandhkot</i>	<i>Total</i>
New cases	5	6	2	2	1	8	2	--	3	2	13	2	7	3	4	6	66
Male adult	2	3	--	1	--	3	1	--	1	2	5	1	5	2	4	1	31
Female adult	3	3	2	1	1	2	1	--	1	--	06	--	1	1	--	3	25
Male child	--	--	--	--	--	1	--	--	1	--	2	1	1	--	--	1	7
Female child	--	--	--	--	--	2	--	--	--	--	--	--	--	--	--	1	3
Delayed diagnosis (after 1 year)	4	4	--	--	--	--	1	--	1	1	5	2	3	--	4	3	28
Tuberculoid tuberculoid (TT)	--	3	--	2	--	3	--	--	1	--	1	1	2	1	--	2	16
Borderline tuberculoid (BT)	3	--	2	--	1	5	--	--	--	--	9	1	3	2	3	4	33
Borderline borderline (BB)	--	--	--	--	--	--	1	--	1	--	1	--	1	--	--	--	4
Borderline lepromatous (BL)	2	1	--	--	--	--	1	--	1	2	--	--	--	--	1	--	8
Lepromatous lepromatous (LL)	--	2	--	--	--	--	--	--	--	--	2	--	1	--	--	--	5
Multibacillary (MB)	5	3	2	--	1	5	2	--	2	2	12	1	5	2	4	4	50
Paucibacillary (PB)	--	3	--	2	--	3	--	--	1	--	1	1	2	1	--	2	16

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