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Impact of Covid-19 Disease on Health Care Services of Leprosy Patients Attending a Tertiary Care Centre, Telangana

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Covid - 19 disease was declared as a pandemic by World Health Organization in March 2020. Subsequently, a nationwide lock down for variable intensity and periods was announced in India to contain the disease. Leprosy patients faced difficulties during this pandemic owing to their long-term health care requirements and lack of access to leprosy services during covid time. This resulted in deprivation of multi - drug therapy (MDT), steroids and other drugs to leprosy patients, which is detrimental to the patients as well as to the society. This study was conducted to analyze the impact of covid-19 pandemic induced lock downs and movement restrictions on leprosy patients attending a tertiary care centre. This provides data to assess their impact on leprosy healthcare services. The study observed a marked decrease in the number of leprosy patients attending the leprosy out patient care and also a reduction in the number of new cases registered during the year 2020. Quarterly analysis showed maximum reduction of cases occurring during the lockdown period and peak covid-19 infection periods. As there is a likelihood of this pandemic continuing and similar other disruptions may occur again, there is a need to assure that MDT and health care services reach leprosy patients by various other means. Some of the modifications can be a) supplying a 3 to 6 month course at a time as A-MDT, b) home delivery of drugs by health workers c) promotion of telemedicine services for leprosy patients d) optimal utilization of social media to educate and counsel leprosy patients on both covid-19 and leprosy. It is also important that leprosy clinics and drug delivery services should be continued both in Covid and Non-covid hospitals at par with Revised National TB Control Programe (RNTPC) renamed as National Tuberculosis Elimination Programme (NTEP) and Anti-Retroviral Treatment (ART) services.

Key words: Pandemic Covid-19, Leprosy Healthcare Services, Impact of Lockdown, India

Introduction

The World Health Organization declared the outbreak of covid - 19 disease a Public Health Emergency of International Concern on 30th

January 2020, and a pandemic on 11th March 2020 (Covid - 19 Pandemic 2021). First case of Covid -19 disease in India was reported from Kerala on 27th January, 2020 in a 20 year old medical student

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who returned from Wuhan (Andrews et al 2021). After that there was a slow increase of cases in the following months. Daily cases peaked in mid-September with over 90,000 cases reported per day, dropping to below 15,000 in January, 2021 (Covid - 19 pandemic in India 2021). A second wave started in March 2021 (Covid - 19 pandemic in India 2021).

The first case was recorded in Telangana on 2nd March, 2020, from a man who had a travel history to UAE (Covid - 19 pandemic in Telangana 2021). This was followed by a slow rise of cases over next few months. A nationwide lockdown was announced from 23rd March, 2020 till the end of May, 2020 to contain the disease (Covid - 19 lockdown in India 2021). The pandemic has touched various aspects of people's lives like health, social and economic segments. During this period all non-emergency consultations were discouraged and majority of health care facilities were converted to covid hospitals. Hospital attendance of patients had come down drastically due to lockdown, lack of transport and fear of acquiring covid disease. Leprosy patients are one vulnerable group who faced difficulties during this pandemic owing to their long-term health care requirements and non-availability of leprosy services during covid time. This resulted in the deprivation of multidrug therapy (MDT), steroids and other drugs to a number of patients who could not attend leprosy care services at various hospitals and medical institutions. This study was conducted to analyze the impact of covid-19 disease on health care services of leprosy patients attending a tertiary care centre.

Material and Methods

The study was conducted in Dermatology, Venereology and Leprosy department of Osmania General Hospital, Hyderabad, Telangana, India, after the first wave of covid disease. This tertiary care centre remained a Non-covid centre and continued regular dermatology and other specialty services during the year 2020. The data was collected retrospectively from outpatient department records for a two year period, from 1st January 2019 to 31st December 2020. Quarterly data on total number of leprosy patient visits, total number of new cases of leprosy registered, their age, sex, type of leprosy, presence or absence and type of reactions, deformities and smear positivity was collected and analyzed (Table 1).

The one-year period of 2020 was divided into 4 quarters. January to March is taken as baseline period, April to June as lockdown period, July to September as non-lockdown peak period and October to December a non-lockdown receding period (Table 2). The data is compared with data of 2019 which was also divided into 4 quarters.

Results

Number and clinical characteristics of leprosy cases attending to our tertiary hospital are summarized in Table 1. The total number of leprosy patient visits including follow up visits was 891 in 2019 and 433 in 2020. Majority of the patients were in the age group of 20 to 40 years in both 2019 and 2020. There were 48 and 18 children below 14 years in 2019 and 2020 respectively which accounted to 20% in 2019 and 17% in 2020 of the total new cases. Males were more than females in both 2019 and 2020 with ratio of 2:1 and 1.5 : 1 respectively. Majority of patients had LL leprosy in both 2019 and 2020.

The total number of new cases was 240 in 2019 and 105 in 2020. In the year 2019, patients with Type I reaction were 53, while those presenting with type II reaction were 130. Whereas in the year 2020, 55 patients presented with Type I reaction and 50 patients with type II reaction. Twenty three (9.58%) patients presented with deformities in the year 2019, while 7 (6.66%) patients presented with deformities in the year

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Table 1: comparative data of reprosy patient's attendance in 2019 & 2020								
	2019	2020						
Total number of Leprosy patient visits	891	433						
Total number of new cases	240	105						
Total number of patients below 14 years	48	18						
Common age group	20 - 40	20 - 40						
M:F ratio	2:1	1.5:1						
Commonest type of Leprosy	LL	LL						
No of pts in reactions								
Туре І	53	27						
Type II	130	87						
BI								
+ ve	108	55						
- ve	132	50						

Table 1 : Comparative data of leprosy patient's attendance in 2019 & 2020

Table 2 : Quarterly analysis of attendance of leprosy patients

			2019					2020		
	Total	Jan - Mar	Apr - Jun	July - Sept	Oct - Dec	Total	Jan - Mar	Apr - Jun	July - Sept	Oct - Dec
Number of leprosy patient visits (including repeat visits)	891	196	230	244	221	433	221	59	75	78
No. of new patients	240	68	73	58	51	105	49	13	16	27

2020. In 2019, 108 new cases (45%) were smear positive, while 55 (52%) of new cases were positive in 2020.

Quarterly data on leprosy patient attendance was analyzed which showed a 28%, 82%, 72% and 47% reduction in the detection of new cases in the four quarters of 2020 respectively compared to 2019, pointing to a considerable fall in number of new cases detected during Covid-19 period (Table 2).

Discussion

The study was under taken to collect data

regarding the attendance of leprosy patients in a tertiary care hospital during covid period. Covid disease started in India at the end of January and peaked by September and reached baseline by December during the first wave. Majority of Government hospitals were converted to Covid hospitals in response to the overwhelming covid case load. Leprosy health care services during covid period were affected greatly along with all other non covid disease services. While leprosy services were discontinued, the Directly Observed Treatment (DOT) services under Revised National TB Control Programme (RNTCP)/ National Elimination Programme (NTEP) for tuberculosis and Anti Retroviral Treatment (ART) services for human immunodeficiency virus (HIV) disease were maintained in these Covid hospitals. Due to lockdown, lack of transport and cessation of leprosy services, patients could not access health care services and procure MDT which has led to discontinuation of leprosy treatment. There was also a lack of follow up services especially to reaction and ulcer patients and there was postponement of physiotherapy and elective reconstructive surgeries (Barros et al 2021). Non covid hospitals had shortage of staff as majority were deputed to covid services and due to quarantine periods of existing staff as only a proportion of them attended at a time. Contact tracing and active case finding services too were affected (Arguer et al 2021).

Untreated, irregularly treated and late detected cases can spread the disease in the community apart from their own individual morbidity in the long run. There were 891 leprosy patient visits in the year 2019 including follow up visits of patients and 433 in 2020, which showed a marked decrease by 51.4%. Total number of new leprosy cases detected in 2019 was 240 and 105 in 2020, showing a reduction of more than 56.25% in the number of new cases detected. The study conducted by Zewdue and colleagues from Ethiopia showed a similar marked decrease of 76.36% (Zewdue et al 2021). This can be detrimental to the society as undetected and untreated cases spread the disease and late detection can lead to deformities and sometimes irreversible damage. Special Interest Group of Leprosy (IADVL group) recommends to maintain compliance and adherence to MDT by registered patients, it advised health centers should be advised to dispense MDT blister packs and other treatments to all leprosy patients who approach

them, even if they are registered with other centers or the private sector (Rathod et al 2020).

Majority of patients belonged to 20 to 40 years age group in both 2019 and 2020. Male to female ratio decreased from 2:1 to 1.5:1 during covid time unlike as expected that marginalized groups of women and children will go undetected (Arquer et al 2021). The percentage of children among leprosy patients was not significantly different from that of previous year indicating healthcare services to marginalized groups like children are not significantly affected during covid time.

Lepromatous leprosy (LL) was the commonest type of leprosy both before and during covid period. This can be due to the fact that the study was conducted in a tertiary care hospital where many referral cases are received. There were 183 visits of leprosy patients including follow up visits for reactions in 2019 and 114 in 2020, showing a 37% reduction. There were 53 patient visits for Type I reaction in 2019 and 27 in 2020 and 130 visits for Type II in 2019 and 87 in 2020. There is more reduction in Type I (49%) reaction visits than Type II (33%). This can be attributed to larger proportion of LL patients and the severity associated with type II reaction might be forcing patients to attend the health care facility. Forty five percent of new cases were smear positive in 2019 while 52% were positive in 2020. This can be due to the fact that more severe cases chose to attend the hospital during Covid time. There was a reduction in the number of cases who presented with deformities in 2020 (6.66%) compared to 2019 (9.58%). This can be due to overall reduction in the cases and deformities take long duration to manifest. Forty five percent of new cases were smear positive in 2019 while 52% were positive in 2020 showing a rise of 7% during Covid period as more LL patients attended hospital during 2020 than 2019.

Quarterly analysis showed maximum reduction of cases during the lockdown period as well as peak periods i.e. April to June and July to September quarters. Second wave of Covid - 19 was much more devastating and might have had greater adverse effect all over India on leprosy and other services. Nevertheless, the lessons learnt from first wave in 2020 would be relevant for future.

Our observations in this study are restricted to experience with the attendance of leprosy patients in our tertiary care hospital. It would have been interesting, if the trends of leprosy patients reporting to Health Systems in the district of Hyderabad were compared with our data of tertiary care hospital attendance. It is likely that attendance in hospitals decreased due to fear of Covid disease as well as lack/suspension of transport services due to lock down. It will be of interest to know if the fear of Covid also prevented them from visiting PHC/CHC in their vicinity. Lack of access to such data has not allowed us to analyze these aspects for a wider understanding of the problem at community and public health level. Verbal inquiries revealed that field officers working in PHC/CHCs delivered 2 to 3 MDT packs at a time, at door steps of leprosy patients. Such information will give ideas for planning of future activities in case of changing dynamics of this pandemic or such disruptions in future.

India accounts for 60% of the world leprosy burden. In the absence of effective vaccine, prevention of leprosy is possible only through early detection and treatment. The study showed a marked decrease in the number of leprosy patient visits and the number of new cases registered. Any pandemic is unexpected and usually hospital resources and facilities are mainly employed to combat the emergencies rather than focusing on the routine ailments. At the same time, special focus has to be given for certain diseases like leprosy, as their concerns and problems go unnoticed during the pandemic (Pugazhenthan et al 2020).

Conclusion

The present study was conducted in a Non-covid tertiary care centre to bring out the impact of covid on leprosy health care services. In our study it was noted that there was a significant reduction in total number of cases, inclusive of new cases in all quarters of year 2020 compared to 2019. It is imperative that measures should be taken to continue leprosy services and to see that MDT is delivered in Covid and Non-covid hospitals on par with RNTPC and ART services. Other methods which can be employed to overcome lock downs and travel restrictions can be by supplying a 3 to 6 month course of MDT at one time (Accompanied-MDT) or having a provision for home delivery of drugs by health workers. Telemedicine services, through mobile or other social media portals can be widely utilized to counsel and educate leprosy patients both regarding leprosy and covid-19 disease.

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