



TO SEE THE IMPACT OF LOCKDOWN IN COVID19 PANDEMIC ON TUBERCULAR PATIENTS IN A TERTIARY CARE CENTRE OF HILLY AREA.

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ABSTRACT **Aim:** To see the impact of lockdown in Covid19 Pandemic on Tubercular patients in a Tertiary care Centre of hilly area. **Material And Methods:** The study was conducted among adult patients in a tertiary health centre in a rural area. Study was conducted through lockdown period, comparing it with corresponding period in 2019. Tuberculosis patients or suspects were categorized in two groups. Group A was designated for participants in the year 2020 during lockdown period. Group B was data taken from time period similar to lockdown period in the year 2019. Data from two groups was compared. **Observations:** There was a 44.1% decline in number of male patients, whose sputum was examined by microscopy for tuberculosis. In case of female patients, decline was 68.6%. This decrease was present in all phases, more in 1st phase, 69.1%. During lockdown period number of patients presenting to medicine department were 45% compared to previous year (5129 vs 11280), sputum positive diagnosed during lockdown and similar period in 2019 were (84.4%) 27 vs 32 (p 0.016). OPD declined by 54.5% during lockdown, however diagnosed tubercular cases by CBNAAT declined by 44.4%. **Conclusion:** COVID 19 pandemic greatly affected the routine healthcare services. Lockdown period saw a decline in number of patients presenting to outdoor as well as indoor patients. There was a decline in number of tuberculosis suspects as well as number of diagnosed tuberculosis patients. However decline in tuberculosis patients was less as compared to overall patients.

KEYWORDS :

INTRODUCTION

Tuberculosis remains a worldwide problem despite well documented treatment and preventive strategy. Tuberculosis remains common in poor people and people living in unstable social and psychiatric background.¹ Mycobacterium tuberculosis is the etiological agent for tuberculosis, and it adapts to survive within the host. M. tuberculosis causes both pulmonary and extrapulmonary tuberculosis such as TB lymphadenitis, pleural TB, ocular TB, skeletal TB, and gastrointestinal tuberculosis.² Sputum smear microscopy is commonly used to diagnose tuberculosis, cartridge based nucleic acid amplification test CBNAAT is based on real time polymerase chain reaction. CBNAAT is having high sensitivity and specificity for diagnosis of pulmonary tuberculosis.³ Implementing DOTS in a diverse and large population, providing the quality of services during rapid expansion phase, decentralization of programme management to the states and, widening the reach of the programme to reach all sections of the society are some of the major challenges.⁴ Challenges to manage tuberculosis in India also include poor primary healthcare system in rural areas, unregulated private healthcare leading to widespread irrational use of firstline and second line drugs, poverty lack of political will and increasing HIV infection.⁵

Global spread of COVID-19 in a quite short time has brought a dramatic decrease in industrial activities, road traffic and tourism.⁶ Many major countries of the world are under lockdown (limiting movements or activities in a community while allowing essential organizations/services to function) or preparing for one to limit spread of COVID-19. Importantly, such lockdown poses restrictions in routine visits to the physician.⁷

These restrictions are compounded in rural areas where means of transport remains, public transport. Public transport remained shut for a long period and after opening people were reluctant to use it. Present study is aimed at finding impact of COVID pandemic and lockdown measures on TB control programme in a rural area of Himachal Pradesh.

METHODS

The study was conducted among adult patients presenting to medical outdoor and indoor, in a tertiary health centre in a rural area. Study was conducted through lockdown period, comparing it with corresponding period in 2019. Lockdown period in India was from 25th March to 31st May. Lockdown period was further divided into four phases, which were as follows

Phase 1 of the lockdown was from 25th March to 14th April

Phase 2 - 15th April to 3rd May
Phase 3 - 4th May to 17th May
Phase 4 - 18th May to 31st June

Inclusion Criteria

1. Age ≥ 18 years
2. Patients diagnosed with tuberculosis with sputum examination or CBNAAT

Data was collected from time of admission to discharge / death. Tuberculosis patients or suspects were categorized in two groups. Group A was designated for participants in the year 2020 during lockdown period. Group B was data taken from time period similar to lockdown period in the year 2019.

We entered data on Microsoft excel spreadsheet and was analyzed using Epi Info 7.1.5 for windows.

The study was cleared by Institutional Ethics Committee.

RESULTS

In this study patients presenting to medicine outdoor and indoor departments, tuberculosis suspects and diagnosed tuberculosis patients during lockdown period were analysed. Table 1 shows number of male and female patients subjected to sputum testing during lockdown period, compared to similar period in 2019. Number of male patients were 207 in 2019 and 115 in 2020 lockdown, 44.4% decrease. Among female patients number were 156 in year 2019, 49 in 2020, 68.6% decrease. Overall there was 54.8% decrease in number of patients subjected for sputum examination during lockdown. During phase 1 there was 69.1% decline, in phase 2 it was 57.1%, in phase 3 decline was 14.5% and during phase 4 decline was 63.9%.

Table 1 : Tuberculosis Suspects

Phase	Group A		Group B	
	Male	Female	Male	Female
Phase 1	23	12	63	50
Phase 2	34	12	70	39
Phase 3	39	18	34	35
Phase 4	19	7	40	32
Total	115	49	207	156

Number of sputum positive patients during lockdown are shown in table 2. In phase 1 of lockdown 1213 patients presented to hospital (medicine department), 9 (0.74%) patients were sputum positive.

However in similar time period last year 3168 presented, out of which 10 (0.32%) were positive (p 0.054). In phase 2 of lockdown less than 50% patients presented to OPD and IPD as compared to group B, however number of sputum positive patients were same 8 (0.33% vs 0.66%). In phase 3 of lockdown nearly 52% patients visited the hospital as compared to previous year, but percentage of patients diagnosed with sputum positive tuberculosis was more during lockdown (0.45% vs 0.28%). Similar results were found in phase 4. In total during lockdown period number of patients presenting to medicine department were 45% compared to previous year (5129 vs 11280), sputum positive diagnosed during lockdown were 84.4% of similar period in 2019, 27 vs 32 (p 0.016).

Table 2: Sputum Positive Patients

Phase	Group A		Group B		P
	Total	Positive	Total	Positive	
Phase 1	1213	9 (0.74%)	3168	10 (0.32%)	0.054
Phase 2	1211	8(0.66%)	2457	8 (0.33%)	0.147
Phase 3	1327	6(0.45%)	2522	7 (0.28%)	0.374
Phase 4	1378	4 (0.29%)	3133	7 (0.22%)	0.675
Total	5129	27(0.53%)	11280	32 (0.28%)	0.0160

Number of patients diagnosed by CBNAAT are shown in table 3. Cartridge based nucleic acid amplification test is done on various samples such as pleural fluid, ascitic fluid, CSF etc. In group A 17 out of 1213 were positive, whereas in group B 61 out of 3168 were positive in phase 1. In phase 1 decline in OPD was 61.7% and decline in diagnosed tubercular cases by CBNAAT was 72.1%.

In phase 2, 28 (2.31%) patients were CBNAAT positive while in group B 41 (1.67%) were positive. Decline during this phase in OPD and diagnosed cases was 50.71% and 31.7% respectively. In phase 3, 19 (1.43%) patients were positive for CBNAAT in group A, while 22 (0.87%) were positive in group B. Decline during this phase in OPD and diagnosed cases was 47.4% and 13.6%. Similarly, in phase 4, 20 (1.45%) were positive in group A while 27 (0.86%) positive in group B. Decline during this phase in OPD and diagnosed cases was 56.01% and 25.9%. Overall during lockdown period OPD declined by 54.5%, however diagnosed cases by CBNAAT declined by 44.4%.

During lockdown period number of patients presenting to OPD in phase 1,2,3 and phase 4 were 23.64%, 23.61%, 25.87% and 26.86% respectively as compared to OPD in 2019 during similar time.

Table 3: Tuberculosis Patients (CBNAAT)

Phase	Group A		Group B		P
	Total	Positive	Total	Positive	
Phase 1	1213	17 (1.40%)	3168	61 (1.92%)	0.241
Phase 2	1211	28 (2.31%)	2457	41 (1.67%)	0.177
Phase 3	1327	19 (1.43%)	2522	22 (0.87%)	0.108
Phase 4	1378	20 (1.45%)	3133	27 (0.86%)	0.072
Total	5129	84 (1.64%)	11280	151 (1.33%)	0.135

DISCUSSION

The worldwide prevalence of tuberculosis remains high, and this remained unchanged over last century as a result of increasing incidence in third world countries.⁸

During lockdown period there was 44.4% decrease in male patients, whose sputum examination was done. Among female patients this decline was 68.6%. These findings suggest that female patients had less access to health care services in terms of tuberculosis diagnostics. In this study during lockdown period number of female patients were 49, compared to 115 males, 42.6% females. During the year 2019 number of females were 75.4%. Horton KC et al showed male to female ratio 2.5:1. Male to female prevalence ratios were highest in South East Asia region.⁹

In this study number of patients presenting to outdoor and indoor medicine department were 5129 during lockdown period and during same period last year number was 11280, reflecting a decrease of 54.5%. Various factors for such decrease was lack of public transport, government advisory to avoid visiting for non emergency health concerns, online consultation using telemedicine services. Prasad N et al studied impact of COVID pandemic on renal patients, in their study there was 92 % decrease in outdoor patients and 61 % decrease in indoor patients. Teleconsultation was accesses by only few patients.¹⁰

In this study 27 patients were diagnosed as sputum positive

tuberculosis as compared to 32 during same period in previous year (p 0.016), 15% decrease. Thus decline in decline in total patients was more as compared to diagnosed sputum positive cases, 54.5% vs 15%. Among various samples processed through CBNAAT there was 44.4% decrease from the previous year data. Number of patients presenting for various complaints in medicine department showed a 54.5 % decrease. Comparing this to national data, the estimated number of the diagnosis of number of new cases of tuberculosis detected as of April 27, 2020 in government healthcare centres saw a significant fall to 34,342 compared to 1,56,000 cases in April month of 2019, a 78% decrease.¹¹

CONCLUSION

COVID 19 pandemic greatly affected the routine healthcare services. Lockdown period saw a decline in number of patients presenting to outdoor as well as indoor patients. There was a decline in number of tuberculosis suspects as well as number of diagnosed tuberculosis patients. However decline in tuberculosis patients was less as compared to overall patients.

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