



IMPACT OF COVID 19 ON DETECTION OF TUBERCULOSIS AT A COMMUNITY LEVEL HEALTH CENTER IN ALIGARH, INDIA

Community Medicine

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ABSTRACT

India is home to more than one quarter of the world's TB burden, and has reported 24.04 lakh new Tuberculosis cases in the year 2019. This number was before the pandemic struck whereas Tuberculosis notification rates fell by 25% during the period of January-June 2020 compared with the same period in 2019. To curb the spread of COVID-19, India announced a nationwide lockdown for 21 days beginning March 2020 that further was extended to several more weeks. This lockdown proved a major hurdle to Tuberculosis patients seeking health care and may result in a delay in diagnosis, treatment interruptions and disease transmission in household contacts. Lockdown has also forced many migrant workers to return to their homes, leading to treatment interruption. In addition to this, since Tuberculosis resembles symptoms of COVID19, this furthermore leads to hesitation and fear in care seeking behaviour leading to decreased Tuberculosis notification rates throughout the country.

KEYWORDS

Tuberculosis, COVID 19, Lockdown, Delay in Healthcare seeking

INTRODUCTION

Tuberculosis is one of the oldest diseases known to man, if not the oldest having evidence of tubercular decays found in Egyptian mummies dating 3000-2400 BC.¹ Coalescent analyses indicate that tuberculosis emerged about 70,000 years ago, accompanied by migrations of anatomically modern humans out of Africa and expanded as a consequence of an increase in human population density during the Neolithic period.² Despite being present for millennia now, one-third of the world's current population is currently infected with Tuberculosis and for every second that passes, one new person gets infected with the same.³

The presence of latent Tuberculosis in almost a third of the world's population, the long incubation period it comes with, the duration it takes to be tested positive, the long duration of antimicrobial therapy, development of resistance towards the antimicrobials were all thought to contribute in Tuberculosis being a major public health hazard despite the availability of a vaccine and drugs against it. To add to this, other than what was previously thought in contributing to the resistance of Tuberculosis towards the drugs, mycobacterial cells seem to divide asymmetrically creating a tapestry of cell types with widely different sizes and growth rates, making each daughter cell have a different rate of resistance towards different drugs.⁴

India is burdened with the highest number of Tuberculosis incidence and mortality drafted an ambitious 'End TB' strategy that even though wouldn't have eradicated Tuberculosis from the country by 2025, it would have fast tracked it. The country was making significant progress as it had even effectively reduced the number of cases that it had lost in the community compared to previous years. Come March 2020, the entire priority of the healthcare system changed towards concentrating on a virus that decreased saturation and put people on ventilators. Since then, with no available resources spared, the already burdened healthcare, now overwhelmed, was doing its best in fighting against a novel virus that brought death almost imminently compared with Tuberculosis that took its time.

Pandemic turned into Syndemic in India when Tuberculosis started coexisting with COVID. COVID invariably affected almost all routine healthcare services and Tuberculosis was not spared. The lockdown that occurred as a result of the pandemic led to decreased care seeking behaviour in the ones who were newly infected with Tuberculosis and for the ones who were already on treatment, there was difficulty in accessing healthcare for drugs and other routine services.

Materials & Methods

Study Design: Cross Sectional Study

Place of study: Community Health Center, Jawan, District of Aligarh,

Uttar Pradesh, India

Sampling Frame: All the patients during the year of 2019 - July 2021 who presented with symptoms of Tuberculosis and patients who were diagnosed with Tuberculosis.

Study Unit & Size: Individual; All Patients who presented with symptoms of Tuberculosis and the ones diagnosed with Tuberculosis falling in the study duration

Study Tools: TB Registry at Community Health Center Jawan that holds information about patients registered for Tuberculosis.

Results



Image 1: Comparison of patients presented with symptoms of TB and patients those diagnosed with TB

- 1 Data obtained from the TB registry starting January 01, 2019 to June 30, 2021 states that in the year of 2019, before the pandemic struck, the total number of patients who were presumed with Tuberculosis and were tested for the same were 1,152 and the number of people diagnosed with Tuberculosis were 120. This is 0.79% of total cases diagnosed at Aligarh which was 15,110 for the year of 2019.
- During the year of 2020, when pandemic began, the total number of patients presumed with Tuberculosis were 624, which is almost half of what was in the year before and the number of patients diagnosed with Tuberculosis had fallen to 59. This is 0.56% of total cases diagnosed at Aligarh which was 10,515 for the year of 2020.
- In the first half of 2021, the number of people presumed with Tuberculosis was 484 and the number of patients diagnosed with the same were 119. This is 1.72% of total cases diagnosed at Aligarh which was 6,913 for the first half of 2021.
- A 50.8% decrease in the number of TB cases diagnosed has been observed at the Community Health Center which is much higher

than the entire district, which decreased at 30.4% whereas India as a whole, had a decrease of 24.4% in the year 2020 compared with the previous years' data.



Image 2: Line Chart representation of the number of patients who presented with symptoms of TB and those diagnosed with TB

DISCUSSION

The incidence of Tuberculosis was steadily on the decline in recent years due to better diagnosis, follow up and cash assistance approaches by the Government. The 'End TB' strategy that was formulated by India in 2017 which was expected to almost eliminate TB by 2025 will now seem more far-fetched than it previously was, for the country with the highest-burden of Tuberculosis.

Since the pandemic began, the country went into a lockdown that has disrupted routine medical services provided by almost all cadres of healthcare facilities. There is a 50.8% decrease in the number of Tuberculosis cases diagnosed in 2020 compared with 2019 and comparing the first half of 2019 where 68 patients were diagnosed with the first half of 2021 where 119 patients were diagnosed, there is a 75% increase in the number of cases. This huge increase in the number of patients diagnosed with Tuberculosis manifests that plenty of cases were missed in the previous year. Missed cases in the community would mean exaggerated opportunities for community transmission, whereas worsened treatment outcomes increases mortality rate for patients who were receiving treatment.

There is an estimated 50% reduction in transmission of Tuberculosis due to restriction of movements due to lockdown.⁵ Mandatory usage of face masks also contribute to a reduction of transmission, but MOHFW stated a shocking fact that only 50% of Indians wear masks and out of them only 14% wear them properly. However, delay in care-seeking by patients with symptoms of Tuberculosis along with delay in diagnosis increases the risk of transmission of Tuberculosis to contacts thereby increasing the number of Tuberculosis cases in the community.

An increased amount of Tuberculosis incidence is expected in the coming years because of the cases that were missed since the beginning of lockdown and it is estimated that there would be an additional 182,000 TB cases and 83,600 TB deaths before 2025 based on a modelling analysis.⁶ In the year 2017, the district of Aligarh had 6,193 cases of Tuberculosis reported followed by 10,695 in 2018 which was a 73% increase in cases and 15,110 in 2019 which was a 41% increase in cases. In 2020, only 10515 cases were reported, which was a 30% decrease in cases compared with the previous year and going by the same numbers, there is supposed to be close to 70% of cases lost in the community.

Higher suspicion among healthcare workers towards the diagnosis of Tuberculosis coupled with Active Case Finding in the community is of prime concern at present to ensure all the missed cases stand a chance to be discovered.

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