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Changes in Tuberculosis prevalence in India: Assessing the trend

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Changes in Tuberculosis prevalence in India: Assessing the trend

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Changes in Tuberculosis prevalence in India: Assessing the trend

Tuberculosis is considered to be the 13th leading cause of death and the second infectious killer after COVID-19. In 2020, 10 million people in the world suffered from TB. 43% new TB Cases occurred in the WHO South-East Asian Region, followed by 25% in the WHO African region and 18% in the WHO Western Pacific (1). As per a national survey, TB prevalence was found to be 312 per 100,000. The World Health Organization estimates incidence of TB (India) to be 188 per 100,000 population in 2020. (2,3) As per a report, Delhi had the highest prevalence of TB at 747 per 100,000 population.

The article aims to collect information from available online sources regarding the changing TB prevalence in India and assess reasons behind the same. (4). Among pediatric and adolescent population, tuberculosis can be easily overlooked by health providers and also can also be very difficult to diagnose and treat. As per records, India is leading the count, followed by China, Indonesia, the Philippines, Pakistan, Nigeria, Bangladesh and South Africa. Multi drug resistant TB continues to be a public health crisis and a health security threat. As per data, only one in three people with drug resistant TB accessed treatment.

TB incidence is falling globally at 2% per year and between 2015 and 2020 the cumulative reduction was 11%. This was over half way to the End TB Strategy milestone of 20% reduction between 2015 and 2020. Globally.

As per national TB cost survey, one in two TB-affected households face costs higher than 20% of their household income. The milestone of 0% TB patients and their households facing catastrophic costs as a result of TB disease was not met by 2020. Ending TB epidemic by 2030 is one of the health targets of the United Nations Sustainable Development Goals (SDGs). (4) As per literature, national TB prevalence survey, ICMR (2019-2021) the point prevalence for microbiologically confirmed PTB was 316 per lakh population. The prevalence to notification ratio of adult pulmonary TB in India is 2.84 and the prevalence of TB infection among population aged more than 15 years is 31.7%.

1. Other findings:

Pooled prevalence of bacteriologically positive pulmonary tuberculosis was 295.9 (95% confidence interval: 201.1e390.6) per 100,000 population. Prevalence was higher among males.(5) It was higher in rural areas compared to urban areas. Pooled prevalence of culture-positive pulmonary tuberculosis (277.8/100,000 population) was higher than smear-positive pulmonary tuberculosis (196.6/100,000 population). As per an article, pooled prevalence of bacteriologically confirmed pulmonary tuberculosis in sensitivity analysis was 186.6/100,000 population. TB notification and the registration require improvements to track TB incidence and mortality. Global targets for reductions in TB disease have been set as part of the End TB Strategy (4, 6).
The 2030 targets set in the End TB Strategy are a 90% reduction in TB deaths and an 80% reduction in the TB incidence rate, compared with 2015 levels.

2. Causes of high prevalence:

- PLHIV (people living with HIV/AIDS) are 18 times more likely to develop active TB. Risk of active TB is higher in persons suffering from other conditions that impair the immune system.
- Under nutrition: Undernourished people are 3 times more at risk. 1.9 million New TB cases were attributed to under nutrition. (2020)
- Alcohol and tobacco use increase the risk of TB disease. As per available data, 0.74 million new TB cases were linked to alcohol use disorder and 0.73 million were linked to smoking. (2020)
- MDR TB: Incorrect prescription by health care providers, poor quality drugs, and patients stopping treatment prematurely are some of the causes of MDR TB. But due to limited second line drug options, more severe drug resistance can develop. Studies attribute contributory factors like lack of awareness and resources, poor infrastructure; increasing drug resistant cases, poor notification and poor counselling of patients. HIV:
- Pandemics/Epidemics: Some of the prominent examples in the Indian region for limited changes in the TB prevalence may be attributed to Covid-19 pandemic/other epidemics. Bubonic plague is another classical example in Surat city of Gujarat in the 1990’s whereby many countries imposed restrictions or bans on travelers and goods from India and this in turn shifted the focus from TB. These events have direct/indirect effects in prioritizing other public health issues.

3. Regional variations

As per Centre for disease control (8), TB epidemiology varies geographically. HIV infection in the African continent is an important factor in the TB epidemic. TB Fatality is highest in South-East Asia region. TB incidence is similar to that in Africa but factors like poverty, under nutrition poverty, may be the prime causes driving the epidemic. MDR TB strains pose various challenges in treating TB. (9)

As suggested by other articles, heterogeneous regional epidemiology of TB indicates that enhanced elimination strategies based on region-specific risk factors like screening for TB among PLHIV’s, addressing poverty and malnutrition, and testing -treating drug-resistant TB including counselling and follow up are needed.

4. Catastrophic cost.

23 national surveys on Tuberculosis related costs (5), concluded that they ranged from 13-92%. 13 billion dollars are required annually to achieve global targets. Investments in TB prevention, diagnosis and care for tuberculosis in low- and middle-income countries accounted for 98% of reported TB cases, and they fall far short of what is needed. As per records, Spending in 2020 amounted to US$ 5.3 billion less than half (41%) of the
global target. There was an 8.7% decline in spending between 2019 and 2020 (from US$ 5.8 billion to US$ 5.3 billion), with TB funding in 2020 back to the level of 2016. As per estimates, US$ 1.1 billion per year is needed to accelerate the development of new tools.

According to an article, Government of India is making efforts to bring down the problems associated with TB. Lack of awareness and resources, poor infrastructure, increasing drug resistant cases, poor notification and overall negligence are the major challenges to be looked into, if SDG/MDG's are to be achieved. (9) .National TB Elimination Programme (NTEP) in India needs close follow up of patients completing treatment to detect early signs of recurrent TB and prevent recurrence. Nutritional programmes targeting the malnourished, screening of geriatric age group, and smoking and alcohol cessation interventions including intensive counselling by the NTEP staff needs to be scaled up for better TB control. In 2020, the WHO warned that disruptions caused by the COVID-19 pandemic have caused setbacks s to NTEP, highlighting that cases were bound to rise if urgent action and investment were not available. Many countries have relocated, human, financial and other resources from TB to the COVID-19 response.

Another important aspect to be considered is the default among patients which is one of the most important contributory factors for drug resistance. Other equally important factors are failures, relapses, deaths and prolonged infectiousness. (12) These can be improved with better diagnostics and proper counselling of patients and proper follow up of patients. Follow up at 6, 12, 18 and 24 months is the right step endorsed by the NTEP.

India needs to give priority to begin investing in health.(2,10,11) Governmental expenditure on health has been 1.4% of the GDP is the lowest in the world. While the 2017 Union Budget has allocated additional funding for health, the allocation will substantially fall short of the 2.5% of the GDP that has been considered a realistic goal in the draft National Health Policy 2015. Other interventions like adherence to NTEP guidelines, exploring new intervention/ change in policies, new methods of training the staff (via Swastha e gurukul platform), counselling and follow up would go a long way in reducing the TB prevalence.

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Conflict of Interest:

He authors have none to declare
Highlights:

Changes in Tuberculosis prevalence in India: Assessing the trend

- The article information regarding the changing TB prevalence in India and study reasons behind the same. Tuberculosis (TB) is much more prevalent in India than previously thought,
- Results of a national survey undertaken by the prevalence of TB is 312 per 100,000 population,
- Causes of high prevalence may be under nutrition , PLHIV's TB, alcohol /tobacco , MDR Tuberculosis, pandemics and catastrophic costs involved in TB control
- TB notification /registration require improvements to track TB incidence and mortality. Budget has to be increased for Tb control, new methods of training need to be adopted to achieve SDG and MDR’s