Tuberculosis Preventive Treatment in India: A Much-Needed Push Towards Achieving TB Elimination

The WHO consolidated guidelines on tuberculosis: Module 1, covering preventive treatment and an accompanying operational manual have been released in March 2020.[1] The new guidelines integrate the previously separate algorithms for detection of latent TB infection (LTBI) and their treatment among at-risk individuals. Tuberculosis preventive treatment (TPT) has been universally recommended for people living with HIV after ruling out active tuberculosis even if testing for LTBI is unavailable.[1] This is in addition to the integration of TB and HIV services for universal screening of all PLHIV for tuberculosis. TPT among children <5 years who are household contacts of TB patients has been strongly recommended.[1]

Both tuberculin-skin test and Interferon-gamma release assays (IGRA) are recommended as tests to detect LTBI but they have not been considered mandatory prior to starting TB preventive treatment, when required.[1] This is appropriate owing to variable availability of purified protein derivative antigen for tuberculin skin test and high cost of IGRA for low- and medium-income countries which are most affected by tuberculosis. The WHO doesn't recommend population-wide LTBI testing and TPT. Instead, TPT is strongly recommended among people starting anti-TNF alpha treatment, patients on dialysis, those affected by silicosis or preparing for transplantation, preferably after testing for LTBI.[1] It is further conditionally recommended in special groups such as health workers, prisoners, drug users, homeless persons and immigrants from high TB-burden countries.[1] On the other hand, systematic LTBI testing and TPT has not been recommended among people with diabetes, underweight individuals, tobacco smokers or those with harmful use of alcohol.[1]

As compared to the 2018 guidelines, the options for TB preventive treatment are now made uniformly applicable to all age groups and irrespective of high or low burden setting. Apart from the 6-9 months daily course of isoniazid, 3 months of daily Isoniazid plus Rifampicin, 3 months of weekly Isoniazid plus Rifapentine, 4 months of Rifampicin and 1 month of Isoniazid plus Rifapentine are recommended. Most notably, as compared to the 2018 guidelines, now the 1-month regimen of Isoniazid plus Rifapentine is recommended for high TB burden countries also. If adopted, this has the potential to improve patient compliance to TB preventive treatment and to improve its programmatic coverage in India. Implementation framework for TPT is also likely to benefit leprosy post-exposure prophylaxis in which a single dose of 600 mg rifampicin is provided to contacts of leprosy patients.[2]

The National Strategic Plan for Tuberculosis Elimination 2017-2025 had included provision for Isoniazid preventive therapy among PLHIV and child contacts of TB patients and other high-risk groups as part of its 'prevent' strategy. However, in 2019, only 49% of all notified TB patients in India could be visited for assessment of household contacts.[3] Out of the child contacts thus identified, 78 percent received TB preventive treatment.[3] Thus, programmes in high-burden countries such as India acknowledge the low priority currently being given to TPT. In order to improve this situation, the draft Strategic Plan To End Tuberculosis in India 2020-2025 now proposes an ambitious target to universally roll out of TB preventive treatment for PLHIV and child contacts of TB patients by 2022.[3] A nation-wise catch-up campaign is accordingly being proposed to cover these two eligible groups.[3] Further, it would be challenging to reach and follow up huge number of eligible individuals, especially the contacts of TB patients treated in private sector and from hard-to-reach areas. Therefore, manpower such as senior treatment supervisors would need to be recruited and trained for effective implementation of TPT.

An oft-cited apprehension to systematic TPT is the risk of development of resistance to anti-tuberculosis drugs, leading to loss of effectiveness in treatment of active disease. Synthesis of available evidence doesn't support this possibility if care is taken to exclude active TB prior to starting TPT.[1] In fact, TPT is unlikely to select resistant *M. tuberculosis* strains as it targets the organism when their numbers are low.[1] On the contrary, TPT could in fact prevent the emergence of drug resistance by reducing the burden of incident TB cases, who might be later exposed to sub-optimal treatment.[1]

The WHO's end TB strategy has set a target of reducing TB incidence to 90% by the year 2030, as compared to the year 2015.[4] India's strategic plan for TB elimination has adopted a more ambitious target of reducing 90% TB incidence by the year 2025 itself.[4] An annual reduction of 10% TB incidence would be needed to achieve this target. This would require interventions across all the pillars of prevention, early detection, effective treatment and capacity building.[4]

Approximately one-fourths of global population is estimated to have LTBI.[5] This is a major contributor to incident tuberculosis

cases through re-activation. However, treating all LTBI is would not be feasible in high burden settings and a strategy targeting those maximally at risk of progression to TB would be needed. Further, tackling LTBI should be considered a long-term investment towards TB elimination as its impact might not be immediately visible within the next 5 years. Therefore, a sustainable strategy is needed with regards to LTBI and efforts should continue well beyond the target dates for achieving incidence and mortality reductions. In TB programme, we need to learn from the risks of declaring early successes as in National Leprosy Eradication Programme wherein progress was reversed after achieving nation-wide prevalence reduction to <1/10,000 population in 2005.[2] It is hoped that the current WHO guidelines will help strengthen the preventive component of TB elimination programme in India.

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Conflicts of interest

There are no conflicts of interest.

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