

Editorial

The Inferno of Tuberculosis: Can it be Extinguished?

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Over the centuries since Hippocrates, tuberculosis has been known as a major scourge of the human species. The roller coaster ride of this centuries old disease appears strangely out of sync with the promise of modernity. It still remains “the captain of all these men of death” as described by Rene Dubos in 1952.¹ The hopes raised by the discovery of the bacillus by Robert Koch in 1882 and Rifampicin as an effective drug against the disease in the late 1960s seem to have been belied. The factors inherent to the characteristics of disease and those of human errors are responsible for this.

Everybody who breaths air from Wall street to the Great Wall of China needs to worry about risk of developing tuberculosis. The time bomb of tuberculosis ticks, not just for some forgotten tribes or below poverty line but for the well heeled and well fed too. The tuberculosis bacillus lodges itself within the lungs where it is contained indefinitely by the body's immune system or for an unlucky 10 percent breaks out into an active infectious tuberculosis. The bacilli characteristically grow intermittently and undergo mutation. Drug resistance of Mycobacterium Tuberculosis develops by the selective growth of resistant mutants.² Risk of mutation increases with use of single drug and combination of therapy reduces it, thus taking care of emergence of drug resistance. Childhood vaccines lose their effectiveness once person reaches adulthood. There is virtually nothing anyone can do to protect themselves! Early diagnosis and treatment reduces the risk of transmission. The treatment required is of longer duration, however, relapse rate with this successful therapy is claimed to be less than 2 percent. Inadequate or irregular therapy leads to increase in relapse rates and can cause emergence of drug resistance. Patients give up medications prematurely due to disappearance of symptoms. These unique features of disease and treatment of tuberculosis, needs to be taken into account when control of tuberculosis is concerned.

However we have various constraints in our country such as, irrational use of antibiotics,³ variability in management practices amongst doctors,^{4,5} limitation of acceptance of directly observed treatment short course (DOTS) strategy by many practitioners, limited diagnostic facilities, change in definition of relapse under revised national tuberculosis control programme (RNTCP) as after cure or “successful treatment completion” leaving many patients in grey area of infectiousness. Once patients get diagnosed, issues such as lack of counseling, migrating population, social factors, lack of motivation of staff members, can affect successful therapy. While on therapy, related adverse events, paradoxical responses, co morbidities and complications may be concluded as poor response to therapy and lead to doctors shopping. All these factors are responsible for irregular treatment, early default, increase in relapse rate and further transmission of disease with emergence of drug resistance. Default can undermine effective tuberculosis control as patients with sustained non adherence to treatment may remain infectious and suffer increase risk of relapses and tuberculosis related mortality. Various studies also have documented factors like drug irregularity, initial drug resistance, smoking, alcoholism, use of fewer than three drugs in intensive phase, greater disease severity, cavitations, high bacterial load, smoking, being responsible for early default.⁶ The same issue is addressed by Bhadke et al where they found drug related adverse events, early improvement, migration for work, long distance of travel to DOT centers as cause for treatment interruption⁷ Systematic review of literature by database search for determining evidence regarding relapse of tuberculosis with standard short course chemotherapy has shown high relapse rates in almost all the studies from India.⁸ Many relapses presented within first year of completion of treatment and there was poor outcome in retreatment cases as compared to relapse in treated new cases.^{9,10} Study by Munje et al shows poor treatment outcome(47.62%) in default cases, however success rate of 71.43% in sputum negative cases and 100% in failure cases¹¹ This may contribute to poor microbiological results in cured cases and unknown sputum status among treatment completed cases, indicating need for revision of definition of relapse and improving sputum microscopy under RNTCP.

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Easy availability of diagnostic interventions for early diagnosis and treatment is the key. Pretreatment counseling regarding disease, its consequences, therapy duration and related adverse events with judicious uninterrupted weight adjusted short course chemotherapy is the gold standard. Other strategies like administrative support, airborne infection control measures, early identification of adverse events and paradoxical reactions with management of co morbidities and complications play vital role. This will help patient to adhere to therapy, thus reducing relapses and drug resistance. Improving the continuity of care at community level may reduce defaults. Faulty treatments in which some patients would neither die or nor be cured is worse than no treatment at all.^{12,13} No magical remedies or new strategies are required to halt the onslaught of the disease. Apathy of healthcare authorities in reaction after a full blown epidemic is not the solution. Reinforcing adherence to therapy through treatment literacy is important for the successful completion of therapy and cannot be substituted by any other intervention.¹⁴

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