

A Review on Tuberculosis

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Tuberculosis: Drug Resistance Strains and Current Treatment Challenge

Abstract: *Tuberculosis (TB), caused by Mycobacterium tuberculosis, remains a major global health concern, especially with the rise of drug-resistant strains. Multidrug-resistant (MDR-TB) and extensively drug-resistant (XDR-TB) forms have significantly complicated control efforts and treatment outcomes. These resistant strains arise primarily due to inadequate or incomplete treatment regimens and poor adherence to prescribed therapies. The limited efficacy of current drugs against resistant forms, coupled with lengthy treatment durations and toxic side effects, presents significant challenges to healthcare systems. Moreover, the emergence of totally drug-resistant (TDR-TB) cases highlights the urgent need for novel therapeutics and improved diagnostic tools. This review explores the mechanisms behind drug resistance in TB, outlines the limitations of current treatment protocols, and discusses recent advances and challenges in developing more effective therapies.*

Keywords: Tuberculosis, MDR-TB, XDR-TB, Drug resistance, Treatment challenges, Mycobacterium tuberculosis, Antibiotic resistance, Novel therapies

