**Can Pharmacist-Led Strategies Improve Drug Safety in Tuberculosis and Respiratory Virus Coinfection? A Review Of Drug-Drug–Drug Interactions and Adverse Outcomes**

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**Background and aims.** Simultaneous infections of tuberculosis (TB) and respiratory viral infections (RVI) present a complex challenge to diagnosis and treatment, and increase the risk of morbidity and mortality, as emphasised during the COVID-19 pandemic. This study aimed to comprehensively review and identify the potential pharmaceutical interventions related to drug-drug interactions and adverse drug reactions in TB-RVI co-infected patients.

**Methods.** A comprehensive review of case reports from Medline, Scopus, Web of Science, and EMBASE databases covering the literature from inception to August 2024 was performed.

**Results.** Sixty case reports of TB-RVI coinfection that describe the treatment of patients related to pharmaceutical interventions were evaluated. The most cases reported involved co-infection of tuberculosis with COVID-19 (73%), while fewer addressed influenza, MERS-CoV, SARS-CoV-1, and other respiratory virus infections. Polypharmacy was shown in more than 80% of cases. The risk of reducing plasma concentrations of antiviral therapies and protease inhibitors, and increasing adverse events of hepatotoxicity, QT prolongation, and hematologic toxicity observed as DDI effects. Clinical outcomes varied widely, with higher mortality rate and complication rates in patients with HIV, diabetes, or delayed TB diagnosis.

**Conclusion/Discussion.** The results underscore the importance of integrating pharmacists into treatment care frameworks particularly in mitigating DDIs, monitoring ADRs, and maintaining treatment continuity through medication adjustments, patient counselling, and adherence monitoring. This review advocates for a proactive, pharmacist-led interventions to improve safety and efficacy in the management of TB and RVI co-infections as well as highlights the need for developed clinical guidelines that address DDI management of co-infection complexity.

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