

DRUG-RELATED PROBLEMS ASSOCIATED WITH ANTIBIOTIC THERAPY IN INFECTIOUS DISEASES

Defin D V and Priyanga J

*School of Pharmaceutical Sciences, Vels Institute of Science, Technology & Advanced Studies
(VISTAS), 600117.*

Abstract

The systematic review aims to investigate the various types of DRPs that arise from antibiotic treatment in infectious diseases and to determine their frequency, risk factors and their impact on patient health. The study assessed the effectiveness of antimicrobial stewardship programs together with clinical pharmacist interventions for reducing medication errors. Researchers conducted a systematic review through the analysis of 75 peer-reviewed studies, which they retrieved from major electronic databases, to investigate drug-related problems that occurred during antibiotic treatment of infectious diseases. The researchers used specific criteria to select studies, which they examined to collect data about the types, prevalence, causes and results of drug-related problems. The researchers used qualitative evidence synthesis to uncover common patterns that lead to antibiotic-related drug-related problems. The majority of studies found that more than 60–85% of patients had experienced at least one drug-related problem, which was caused by their antibiotic treatment. The most frequently identified problems were inappropriate antibiotic use, incorrect dosing, prolonged duration of therapy, drug–drug interactions, and adverse drug reactions. Beta-lactams, cephalosporins, aminoglycosides, fluoroquinolones and carbapenems belong to the antibiotic classes that cause the highest number of drug-related problems. The main risk factors of the study included polypharmacy, prolonged hospitalization, multiple comorbidities and poor adherence. The clinical consequences of antibiotic-related DRPs included treatment failure, increased antimicrobial resistance and higher healthcare costs. Clinical pharmacist-led interventions and the antimicrobial stewardship program significantly decreased the ratio of DRPs and improved clinical outcomes. Drug-related problems that emerge from antibiotic treatment in infectious disease management occur frequently and most cases can be avoided. The implementation of antimicrobial stewardship programs together with guideline-based prescribing needs clinical pharmacist involvement to achieve DRP reduction while improving patient outcomes and controlling antimicrobial resistance.

Keywords: Drug-related problems, Antibiotic therapy, Infectious diseases, antimicrobial stewardship.