Over-the-counter antibiotics: a double-edged sword in fight against antimicrobial resistance

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Antibiotics are referred to as the 'magic bullets' for fighting bacteria.[1] However, their misuse and abuse over the decades have resulted in selection pressure with the emergence of resistant bacteria. This has led to emergence of antimicrobial resistance and which is a significant cause of severe infections; longer hospital stays and increased mortality rate. A report from 2011 suggests an alarming increase in the resistance against cephalosporin, aminoglycosides and fluoroquinolones. These antibiotics are critically important as considered by WHO.[2] A recent review showed that patients suffering from bacterial urinary tract and respiratory tract infections when treated with antibiotics reported individual resistance which may persist for twelve months after the treatment, therefore requiring second line antibiotics.[2]

Antimicrobial-resistant infections have been ranked third leading cause of death after cardiovascular diseases. According to a publication of 2022, a million deaths were estimated in 2019 alone and an addition 5 million deaths were somewhat related to drug-resistant infections and by 2050 the numbers are estimated to be increased yearly up-to 10,000,000 exceeding the death rate of cancer.[1] A variety of interdependent factors related to healthcare and pharmaceutical play a role in the development of AMR, misuse of over-the-counter medicines is one of them. Several past studies in low- and lower-middle-income countries (LMICs) have highlighted lack of knowledge, poor attitudes and ineffective practices regarding antibiotic prescriptions along with significant over-the-counter (OTC) usage which could contribute to rising antimicrobial resistance (AMR).[3,4] According to a study in Nepal most patients lack awareness of the proper uses of antibiotics even though they are familiar with the term "antibiotics".[3] Furthermore, as reported by WHO more than half of the antibiotics prescription all over the world are deemed inappropriate and two-thirds of easily available antibiotics from pharmacies are used for self-medication.[3] From a study conducted in India during 2021 it was noticed that consumers often do not purchase a full course of antibiotics and typically rely on their own knowledge of medications and frequently request over-the-counter antibiotics.[5]

In order to combat AMR our main goal is not only to reduce the amount of antibiotics being consumed but also to promote a rational use of antibiotics only to patients who are expected to get benefit from the treatment. Immediate interventions are required to contain AMR which involve enforcement of laws limiting over-the-counter sale of antibiotics, spreading awareness about AMR, implementing surveillance, monitoring and hygienic measure. These interventions must be implemented soon to limit the rapid spread of antimicrobial resistance.

DOI: https://doi.org/10.47391/JPMA.30584

Disclaimer: None.

Conflict of Interest: None.

Source of Funding: None.

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Submission complete: 18-03-2025 **First Revision received:** 07-04-2025

Acceptance: 30-04-2025 **Last Revision received:** 29-04-2025

AUTHOR'S CONTRIBUTION:

MS: Concept, drafting, critical revision and final approval.

ML: Literature review, gathered supporting references, writing and final approval.

ZZ: Review, refined the manuscript accuracy and final approval.