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Review Article

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Intensification in Antibiotic Consumption in Pakistan and Factors that Promote the use of Antibiotics: A Mini Literature Review

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Abstract

Increase in antibiotic consumption is a serious threat for the antibiotic's resistance. Antibiotic resistance is still a serious worldwide public health issue, and community pharmacies dispensing of antibiotics without a prescription is a key contributor. By using pharmacy interviews/ questionnaires and/or simulated patient approaches, the MEDLINE, PubMed, and EMBASE databases were utilized to search and locate studies reporting the dispensing of non-prescribed antibiotics in community pharmacies or drugstores that sell medications for human use and also retrieved the studies reporting the insetting use of antibiotics. Overall, in Pakistan, overprescribing of antibiotics, self-medication and without prescription dispensing of antibiotic is the main cause in the rise of antibiotic consumption which need a serious attention from the policy makers.

Keywords: Antibiotics Dispensing; Antibiotics Resistance; Antibiotics Consumption

Introduction

In Pakistan, there are public and private sectors in the health sector. Government institutions such as tertiary healthcare institutions, federal medical centres, teaching hospitals, state specialist hospitals, and primary healthcare centres make up the public healthcare sector, whereas private hospitals and clinics, community pharmacies, maternity homes, and patent medical stores make up the private healthcare sector. Boeckel found a 35 percent increase in antibiotic usage in underdeveloped nations between 2000 and 2010 (*Van Boeckel et al., 2014*). This is like global research that found that the rate of antibiotic intake in roughly 76 nations grew by 39% between 2000 and 2015 (*Klein et al., 2018*) [1].

Antibiotics Consumption in Pakistan

Antibiotics are apparently offered as over the counter (OTC) drugs in Pakistani pharmacies. This is not the first time this has been recorded, but it has been established in multiple earlier investigations (*Ashraf et al., 2017; Atif et al., 2019; Saleem et al., 2020; Saleem et al., 2019*) [1-4]. Antibiotics are widely used, according to several research. Infections are the most common reason for taking antibiotics. Self-medication has been deemed beneficial by the World Health Organization (WHO) as a technique of managing people's health, particularly in areas where health care resources and the medical system are few (*Sapkota et al., 2010*) [5]. This is

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supported by the fact that some illnesses are self-limiting and, as a result, may be effectively controlled by prudent self-medication while also maximizing the use of limited resources (Shankar, 2018) [6]. However, certain diseases have been misdiagnosed as infections because of self-medication, leading to the overuse of antibiotics [7].

Research in Pakistan found that 96.9% of pharmacies and medical stores administered antibiotics without requiring a prescription, encouraging antibiotic overuse, self-medication, and antimicrobial resistance (*Saleem et al., 2020*) [3]. According to another study from Pakistan, 78 percent of antibiotics are prescribed for mild illnesses. Antibiotics were dispensed without prescription in 90.5% of cases in research done in Pakistan's northern provinces. Resistance to ceftriaxone and quinolone antibiotics, which are used to treat non-typhoidal Salmonellae (NTS), is increasing in Pakistan [8,9]. Resistance to amoxicillin, ampicillin, novobiocin, and cefaclor ranged from 62 to 75% in general. Multidrug resistance (MDR) is on the rise in Pakistan, with research finding that 77.5% of all screened isolates were resistant to three or more of the tested antibiotics. Various findings in Pakistan on the rise of antibiotic resistance, including the emergence of MDR, corroborate a dramatic increase in antibiotic resistance or even the emergence of MDR across the country (Afzal, 2017) [10]. In a study of 93 Escherichia coli isolates from private hospitals in Lahore, Pakistan, the researcher discovered that 82 percent were resistant to beta-lactam antibiotics, with many also resistant to fluoroquinolones and trimethoprim-sulfamethoxazole - due to antibiotic misuse (*Saleem, et al., 2019*) [4].

Factors that Motivate Antibiotics Dispensing

Some socioeconomic and behavioural variables, particularly in poor nations, have been linked to the inappropriate use of antibiotics. These include a lack of funds for sufficient treatment, inaccurate information about their sickness, and inadequate drug information (which resulted in self-medication for minor illness). Furthermore, because of the circumstances, some individuals may not believe it important to contact a doctor for the current disease if they had previously received a prescription for a comparable ailment (Poudel & Nissen, 2018) [2]. Poor regulatory measures, ignorance of related hazards, difficulty to buy specific drugs, lack of time to visit the hospital, easy access to medicines, the effect of widely marketed pharmaceuticals, and a predisposition to self-care are all factors that contribute to self-medication. Self-medication has several negative implications, including incorrect diagnosis and prescription selection, failure to detect adverse drug responses, drug-food and drug-drug combinations, drug misuse and dependency, drug-induced illnesses, and increased public healthcare expenses (Poudel and Nissen, 2018) [2]. Economic incentives, consumer expectations, poor professional restrictions, and the influence of pharmaceutical salespeople have all been proven to impact the inappropriate distribution of antibiotics.

Conclusion

Antibiotic usage is common among Pakistanis, according to evidence from the research examined, and is frequently associated with incorrect use of these medications, which is a significant source of resistance. Furthermore, by increasing public access to primary healthcare institutions, undertaking educational activities, and strictly enforcing the anti-nonprescription antibiotic usage legislation. Reduced infectious illness burden might assist to lessen the impact of Self-medication.

Authors Declaration

No conflict of interest between authors.

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