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Indiscriminate use of antimicrobials

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Abstract: The present article aims to discuss the indiscriminate use of antimicrobials, since it occurs when these drugs are used for the treatment of infections, which are not caused by bacteria. Assess the risks caused by the inappropriate use of antimicrobials in people. It is observed the misuse of antibiotics for the treatment of infections and variations in the sensitivity of bacteria in the face of these medications. Bacterial resistance, addressed by the indiscriminate use of antimicrobials is a public health issue, due to the increase in morbidity and mortality worldwide. The country has been trying to soften the free sale of medicines, preventing ineffective use from competing for the bacterial resistance process.

Keywords: Antimicrobials. Infections. Microorganism.

1. Introduction

Antimicrobials represent a part of drugs that are capable of inhibiting the growth of microorganisms, used in cases where the patient has bacterial infections (PECORARO *et al.*, 2021). These drugs characterize the second class of most used drugs, representing 20 to 50% of hospital expenses, contributing significantly to "Microbial Resistance (AMR)", which has become a source of global discussion due to threat to public health, affecting the microbiota of both the patient who uses it and others (MOTA *et al.*, 2010).

AMR is caused due to the indiscriminate use of

antimicrobials, through a natural biological process of microorganisms to be able to multiply even in large amounts of antibiotic. If microorganisms can grow over time, antibiotics used for the proper purpose will have their use limited (PECORARO *et al.*, 2021).

The appearance of resistance is explained by the recombination of genes, which through natural selection survive the most resistant bacteria, due to the factor of genetic variability. The bacterial organism is extremely dynamic, where essential activities are controlled by a chromosome, while non-essential activities such as drug resistance and gene recombination are controlled by mobile organelles (plasmids,

transposons and integrons) (MOTA *et al.*, 2005).

According to MOTA *et al.* (2010), there are two worrisome factors with the irrational use of these drugs: the first factor is the imbalance of the natural microbiota of the human being, in which some bacteria are destroyed while others survive; the second factor is the creation of multidrug-resistant bacteria. Both factors promote patient morbidity, worsening of clinical cases and high costs to the health sector.

According to the World Health Organization (WHO), more than 50% of drug prescriptions are performed incorrectly. And more than 50% of patients also misuse medications. According to BERQUÓ *et al.* (2004) there are three ways of solutions for the indiscriminate use of these drugs: study of prescription habits, with the aim of improving practices and habits; development of new behaviors for physicians and users through educational resources; and, finally, awareness of patients about the rational use of antibiotics.

The role of the pharmacist in the fight against this public health chaos, especially those who work in drugstores and pharmacies, is essential. The professional may dispense with the use of these medicines in a targeted or educational manner; and it is essential to represent the rational use of medicines, contributing to the patient's quality of life and reducing bacterial resistance (VIEIRA and FREITAS, 2021).

2. Methodology

The following article is a literature review on the indiscriminate use of antimicrobials, where the means used for research aimed to search for articles in the databases: Google Scholar, SciELO, LiLacs, Web of Science.

Inclusion criteria	Exclusion criteria
Articles in portuguese	Articles in other languages
Articles published in the last 15 years	Articles that run away from the topic addressed
Articles related to the study of the subject	Articles that do not fit In the years chosen for the development of the study

For the survey of articles, the following were used as descriptors: antimicrobials, bacterial resistance. At first, 50 articles were analyzed, where at first 20 were discarded, because they were in the English language, of the 30 that remained, only 10 were within the context and they were the ones used for the development of the research.

3. Results and Discussion

Improper use of antimicrobials occurs when these medications are used for the treatment of infections that are not caused by bacteria (such as colds) and when they are consumed in incorrect doses and even at an inappropriate treatment time. That is, a dangerous dynamic that Trabulsi LR and Alterthum F (2011) recall when they argue that the antimicrobial does not induce resistance, but rather is a picker of the toughest strains existing in the middle of a population.

For Trabulsi LR and Alterthum F (2011) it is necessary to be aware of factors such as the proper use of antimicrobial agents, obtaining an accurate diagnosis, determining the need and timing of antimicrobial therapy and the proper understanding of how the dosage affects the antimicrobial activities of different agents to adapt to the characteristics of the host, using the narrower spectrum and shorter duration of therapy and alternating oral agents as soon as possible. Some important points as a way to avoid antimicrobial resistance. Antimicrobial resistance, a global challenge to public health, has accelerated by overuse of antibiotics worldwide, making antimicrobial resistance the cause of severe infections, complications, longer hospital stays and increased mortality. Over-prescribing antibiotics is associated with an increased risk of adverse effects and more frequent reappearance of infections (MOTA, 2005).

Interventions should cover the application of the policy to prohibit the over-selling of antibiotics, use of antimicrobial administration programs, improvement of communication skills with patients through information leaflets and the performance of more pragmatic studies in primary care, the results of which are in the interest of physicians, such as complications and outcomes (BERQUÓ, 2004).

4. Conclusions

When studying and performing the appropriate analyses of the above-mentioned subject in question, it is concluded that although in some cases the use of antimicrobials is necessary, its irresponsible or incorrect use tends to worsen the situation in which the individual who used them is found; since this type of attitude can harm the normal microbiota of the organism, leaving it vulnerable and consequently facilitating the pathogenic action of bacteria that have acquired resistance.

Knowing this fact, it is clearly noted that it is necessary to follow the proper procedures prescribed by the professional who prescribed the antibiotic so that it can perform its function properly instead of impairing, among other factors.

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