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Commentary

Antibiotic Use and Resistance Awareness, Knowledge, and Attitude among Lebanese Population: A cross-sectional survey

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Abstract

Antibiotics are one of the most affordable, life-saving medications that also aid in the extension of people's lives. However, this therapeutic achievement is currently under jeopardy due to the notable rise in antibiotic resistance among prevalent bacterial infections, endangering the successful outcomes of critically ill patients. Antibiotic resistance (AR) is a state in which the bacteria evolve resistance to antibiotics used to treat the diseases they cause.

Keywords: Antibiotic Resistance, Infections, Bacteria, Self-Medication

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Introduction

The overuse of antibiotics is a major factor contributing to AR. The World Health Organization (WHO) defines rational medicine use as providing patients with the right drugs for the right indications at the right doses for their unique needs, for a reasonable amount of time, at the lowest possible cost to them and society. When one or more of these requirements are not met, the use of medications becomes irrational or unnecessary [1-3]. Self-medication, which is defined as using prescription drugs without a doctor's prescription or treating ailments according to advice from unqualified professionals, is the primary reason of AR, adding to that it may increase the risk of experiencing uncontrollable side effects or drug reactions, misdiagnosing, and delaying receiving medical attention. The overuse of antibiotics is a major factor contributing to AR [4]. The World Health Organization (WHO) defines rational medicine use as providing patients with the right drugs for the right indications at the right doses for their unique needs, for a reasonable amount of time, at the lowest possible cost to them and society. When one or more of these requirements are not met, the use of medications becomes irrational or unnecessary. Self-medication, which is defined as using prescription drugs without a doctor's prescription or treating ailments according to advice from unqualified professionals, is the primary reason of AR, adding to that it may increase the risk of experiencing uncontrollable side effects or drug reactions, misdiagnosing, and delaying receiving medical attention [5-7].

Literature Review

This is a cross-sectional analysis conducted from October to December 2023 in Lebanon. The provinces covered included Mount Lebanon, Beirut, South, North, and Bekaa. The sample size collected was 457. The age of the participant had to be above 18 years old to be included within the study, in addition to being able to read and/understand information when said to them. Participants were informed of the study's objective prior to commencement [8]. The questionnaire is composed of four main sections: demographic questions (age, gender, area of residency, educational level, medical background, and whether the participant has any chronic diseases), awareness assessment (times antibiotics were consumed, who advocated their use, reason, and length of their use), knowledge assessment questions (the effect of AB on some diseases, when to stop, and resistance factors), and attitude assessment questions (supply of antibiotics, duration of use, counseling, and solutions done when antibiotics do not provide the intended effect) [9-10].

Of the 250 questionnaires sent online, 174 responded (69.6% response rate). Moreover, of the 300 approached participants at the pharmacies, 283 responded (94.33% response rate). The total sample is then 457. It was shown that self-medication 287 (62.8%) was the major source for antibiotic initiation. Most of the participants stated that they stopped the course of treatment when their symptoms improved 290 (63.5%). The use of antibiotics was mainly for the treatment of sore throat 208 (45.5%) and common cold 130 (28.4%). In the knowledge assessment, it was shown that most of the participants 305 (66.7%) believed that antibiotics are effective against viral infections, 446 (97.6%) against bacterial infections, and 117 (38.7%) against fungal infections. In addition 314 (68.7%) of the participants stated that antibiotics work on cough and cold, and 317 (69.4%) believed that antibiotics increase the speed of recovery from cold [11-18]. 309 (67.6%) of the participants denied the idea of stopping the antibiotics immediately without consulting a doctor or pharmacist in case they experienced side effects (such as nausea, and diarrhea), unlike those 312 (68.3%) who stated that the medication should be directly stopped if allergic reactions (rash, and shortness of breath) were experienced. Furthermore, half of the participants 230 (50.3%) knew that overuse of antibiotics is the most important reason for the resistance of bacteria. 152 (33.3%) thought that incomplete antibiotic courses cause resistance. Most of the participants 302 (66.1%) stated that they do not complete the course of treatment with antibiotics when they feel better, and that 225 (49.3%) prefer having access to antibiotics without seeking medical advice. Also, 258 (56.5%) preferred having antibiotics as an OTC medication [19-25].

Discussion and Conclusion

In conclusion, the study revealed that the Lebanese population showed lack of knowledge and awareness of antibiotic use and resistance. It was shown that younger age, female gender, and higher education along with medical background knowledge had a significant effect on awareness. Hence, the irrational use of antibiotics is significantly influenced by public knowledge, attitudes, and beliefs about antibiotics. It is obvious that there is a need to educate Lebanese populations about antibiotic use and resistance. This highlights the significance of education programs and campaigns raising public knowledge about antibiotics in order to prevent health problems. The belief that antibiotics are safe, their availability without prescription in Lebanon, and the mentality of storing them for future use increases the

chance of their self-medication and over-use [25-30].

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