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Misuse of antibiotics in Iraq: Babylon Governorate as a model

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Abstract

The efficacy and easy access to antibiotics have led to their overuse, which allows for the development of resistance to them. This study took Babylon Governorate as a model to prove whether the above hypothesis is true or not. We aimed at exploring whether there are any restrictions for dealing with antibiotics by pharmacists in the Babylon Governorate, at identifying the distribution of pharmacies in Hillah, and at estimating the capability of the health authority to control them. A total of 165 pharmacies were visited in an attempt to purchase antibiotics without a prescription. Antibiotics were obtained from 164 pharmacies, and one pharmacy apologized because they did not have the antibiotic. Moreover, a survey was randomly distributed to different pharmacies and pharmacists asking them whether they sell antibiotics without prescriptions, and an online questionnaire was distributed to pharmacists and pharmacy students in the Babylon Governorate. The results revealed that the percentage of pharmacies that sell antibiotics without medical prescription is 98%; the remaining 2% belongs to the pharmacies that do not stock these antibiotics. We hypothesize that the main reason for this phenomenon is the chaotic distribution of pharmacies in the Governorate, and the lack of supervision by the authorities. Mapping has revealed a random distribution of pharmacies in Hillah, which is performed in an unscientific manner without taking into account whether these areas need pharmacies or not. Moreover, the lack of supervision by the Government and the health syndicates allows for antibiotics to be largely dispensed in the pharmacies without a medical prescription.

KEYWORDS

misuse, antibiotics, pharmacies, public health, Babylon Governorate

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1. INTRODUCTION

Antibiotics save lives; however, overusing or misusing prescription medication can have serious impacts, such as the development of antibiotic resistance, increasing risk for side effects, disruption of the gut microbiome, and inflated costs and use of healthcare resources. Unfortunately, the misuse and overuse of antibiotics has become a serious public health issue, threatening the great achievements of medicine. Antimicrobial resistance is a growing concern that threatens to compromise effective treatment of infectious diseases, especially in high-income countries [1]. Although the irrational use of antibiotics was once considered a problem only in developed countries, there has been a staggering rise in low- and middle-income countries [2].

Antibiotic resistance frequently occurs in hospitals due to the increasing number of patients, surgical procedures and interventions, that are associated with the increasing use of antibiotics in healthcare. Antibiotic resistance rates are increasing daily, not only with respect to the hospital community, but also in various other areas. Animals are given antibiotics to treat infections, but mostly for faster growth for commercial purposes.

Antibiotic resistance has been described as one of the biggest global threats of the 21st century [3]. Self-medication by consumers has been identified as one of the main causes of the development of antimicrobial resistance [4]. In an effort to control their disease, patients take the advice of false media sources and friends and family, which causes them to take antimicrobials unnecessarily or in excess. Many people resort to this out of necessity, when they have a limited amount of money to see a doctor, or in many developing countries where the economy is poorly developed and the lack of doctors is a reason for self-medication. In these developing countries, Governments are resorting to allowing antibiotics to be sold as over-the-counter medicines so that people can access them without having to find or pay to see a medical professional [5]. This increased access makes it extremely easy to obtain antibiotics without consulting a doctor and, as a result, many antibiotics are taken incorrectly, thereby resulting in resistant microbial strains. The main problem with self-medication is the public's lack of knowledge of the dangerous effects of antibiotic resistance, and how they can contribute to it through mistreatment or misdiagnosis of themselves. The risks of overuse or overprescribing of antibiotics include not only increases in antibiotic resistance, but increases in disease severity, length of illness, health complications and adverse effects, risk of death, healthcare costs, rehospitalization, and the need for medical treatment for health problems that may have resolved on their own [6].

2. MATERIALS AND METHODS

Our study included two parts. In the first part, the locations and numbers of pharmacies in the Babylon Governorate were identified for the purpose of drawing a map of their geographical distribution. The second part was an attempt to determine the extent of response to providing patients with antibiotics without requesting a prescription. The second part included two tasks. The first was a direct visit by the work team to 164 pharmacies in different areas of the Babylon Governorate centre, where we asked them to provide the patient with antibiotics (different types of antibiot-

ics, including rifampicin) directly, without a prescription. The second was the distribution of a questionnaire that included 20 questions so as to determine the extent of knowledge of the dangers of the excessive use of antibiotics. This questionnaire was distributed to the people who were working in the pharmacies.

An official inquiry was also made to the Pharmacists' Syndicate in Babylon to provide researchers with a distribution plan for pharmacies in the Babylon Governorate, and the answer was that they do not have a map and that it was not possible to know the number of licensed pharmacies in the Hillah centre.

3. RESULTS

In direct visits to 164 pharmacies in the Babylon Governorate centre to request antibiotics without a prescription, the response rate was 100%, as they were obtained without any hesitation from the pharmacist and without requiring a prescription. One pharmacist out of the total number apologized for not providing the type of antibiotic that was asked about, as it is not available in his pharmacy.

By analysing the data from the questionnaires, we came to the conclusion that there is an obvious contradiction between what pharmacists practice and their answers to the items of the questionnaire. The other shocking result is that there are people working in the pharmacies who are not pharmacists. These people sell patients various drugs (including antibiotics) without complying with the national laws that govern drug sales.

Our results indicate that different types of antibiotics are easily dispensed in private pharmacies (more than 55%) and are dispensed at lower levels in private clinics (about 20%), while the percentage of dispensing in Government hospitals is about 25%. Antibiotics that are commonly used by patients without a prescription are as follows: amoxicillin (96.70%), metronidazole (44.40%), cefixime (31.10%), and cephalexin (27.80%). Other types of antibiotics used without prescription represent only 4.80% of the patients' choice. Results show a poor knowledge and massive misuse of antibiotics among the pharmacies who sell antibiotics and the users of these antibiotics in the Babylon Governorate.

4. DISCUSSION

The dispensing of antibiotics without prescription is a common practice in the pharmacies of the Babylon Governorate. Community pharmacists tend to dispense antibiotics when these are requested by name, without asking for prescription.

This result is similar to those of previous studies conducted in Middle Eastern countries, thereby indicating that pharmacists appear irresponsible in dispensing antibiotics without a prescription by ignoring rules and regulations in many cases [7,8]. Antibiotics are largely dispensed to patients, even for cases that do not require them.

The lack of a supervisory role for antibiotics by the Government and the health syndicates allows pharmacists to dispense antibiotics without prescription. The increase in the number of pharmacies in the Babylon Governorate may encourage this phenomenon due to the competition among pharmacies for profit. On the other hand, patients prefer to buy antibiotics from the pharmacy so as to save time and the cost of consulting a doctor. Various studies have reported similar results, indicating that time and cost savings were associated with dispensing antibiotics without a prescription [7,9,10]. In fact, patients may spend a long time to see a doctor and remain waiting in long queues at primary healthcare centers or even at private clinics. However, it seems that the cost of consulting a doctor is high, which forces patients to buy antibiotics themselves.

Finally, distributing pharmacies randomly, in an unscientific manner, without knowing whether these areas need pharmacies or not, could be an important factor in this problem. These issues facilitate the increase in antibiotic resistance and, therefore, by addressing these issues one could regulate the process of dispensing antibiotics without prescription.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

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