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ANTIBIOTIC USAGE AND SELLING PATTERNS IN DHAKA CITY, BANGLADESH

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Abstract
The aim of the present study is to find out the usage and selling pattern of antibiotics in Dhaka city, Bangladesh and to present the scenario of that Antibiotic resistance is one of the major problems in both developed and developing countries. Bangladesh being a developing country is facing serious problem in this issue. Usage of antibiotics by patients and the selling patterns by the sellers play an important role in antibiotic resistance. A survey was conducted with a semi structured questionnaire over the patients and drug sellers of Dhaka city, Bangladesh. From the survey it was found that cefuroxime was the highly sold antibiotics in Dhaka city, Bangladesh. Drug sellers and patients hardly follow the prescription in case of dispensing or buying antibiotics. In most of the cases, patients do not buy full course of antibiotics which is very alarming.

Keywords: Antibiotic resistance, awareness, cefuroxime.

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INTRODUCTION

Antibiotics are the most important classes of drug which are chosen to treat patients in Bangladesh [1,2]. Antibiotics are basically chemical substances obtained from mostly microbial sources and used to kill or inhibit the growth of bacteria [3]. Being a tropical country, infections are very much common in Bangladesh and thus why the usage and selling of antibiotics are too high here. Usage and selling of high amount of antibiotics may cause antibiotic resistance if it is not sold or used correctly. Antibiotic resistance is a situation when the maximum tolerable dose of antibiotic fails to inhibit the growth of bacteria. Antibiotic resistance is directly related to the antibiotic use. As, antibiotic is readily available in the market of Bangladesh, physicians have a plenty of choices while prescribing antibiotics. Rationale usage of antibiotic is not yet established in Bangladesh. Knowledge gap about antibiotic resistance leads to the irrational usage and selling of antibiotic. The aim of the present work is to find out the usage and selling pattern of antibiotics among the patients and sellers of Dhaka city, Bangladesh.

MATERIALS AND METHODS

A field survey was conducted over 200 patients and 100 drug sellers of Dhaka city, Bangladesh using a semi structured questionnaire. After obtaining verbal consent, the questionnaire was asked and the answers were noted. Finally, the data was tabulated and presented graphically using Microsoft Excel 2007.

RESULTS

Demographic characteristics

From the survey, it was found that, 58.5% respondents were male and rest 41.5% patients were female. All the drug sellers were male.

Table 1: Demographic characteristics of the respondents

Number of drug sellers	Number of patients	
100	200	
	Male= 117 (58.5%)	Female= 83 (41.5%)

Mostly dispensed antibiotics

From the survey, it was found that Cefuroxime was highly sold antibiotics among all with 32.1%. Cefixime (27.5%), Azithromycin (14.7%), Amoxicillin (7.3%), Ciprofloxacin (6.4%), Cephradin (4.6%), Amoxicillin+Clavulanic acid (3.7%) and Clindamycin (3.7%) were other dispensed or sold antibiotics according to the selling frequencies.

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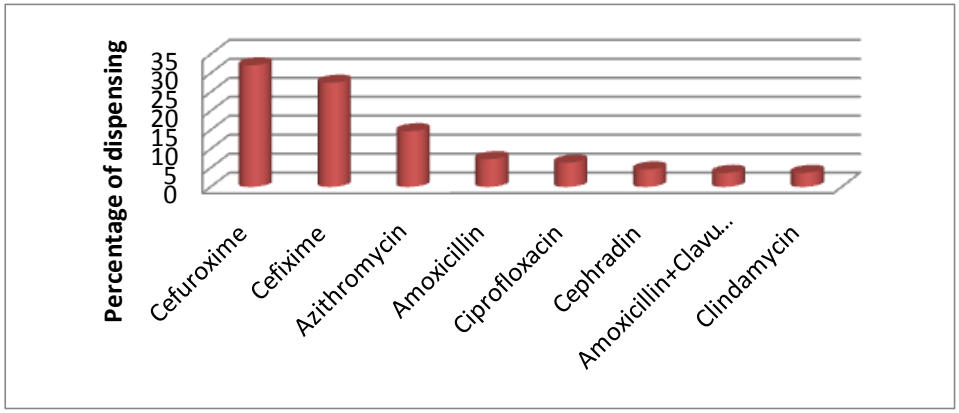

Fig. 1: Mostly dispensed antibiotics

Knowledge of antibiotic resistance among the patients

It was very unsatisfactory that, form the survey it was found that, 83% patients has no ideas about antibiotic resistance which is very alarming.

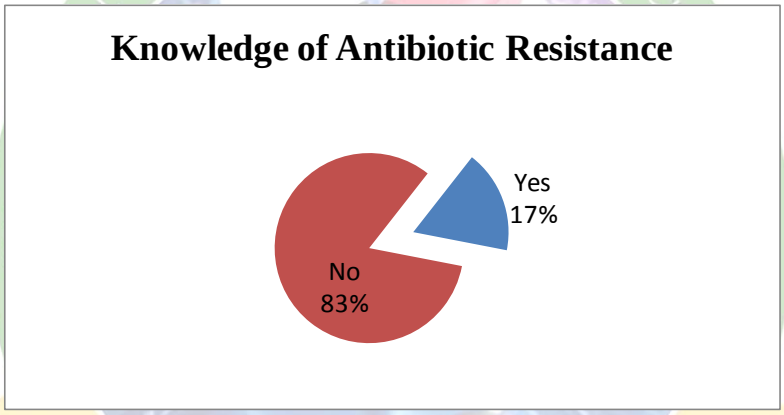

Fig. 2: Knowledge of antibiotic resistance among the patients

Purchasing behavior of antibiotics (prescription or without prescription)

Almost 93% patients buy antibiotics without prescription and only 7% buy with prescription.

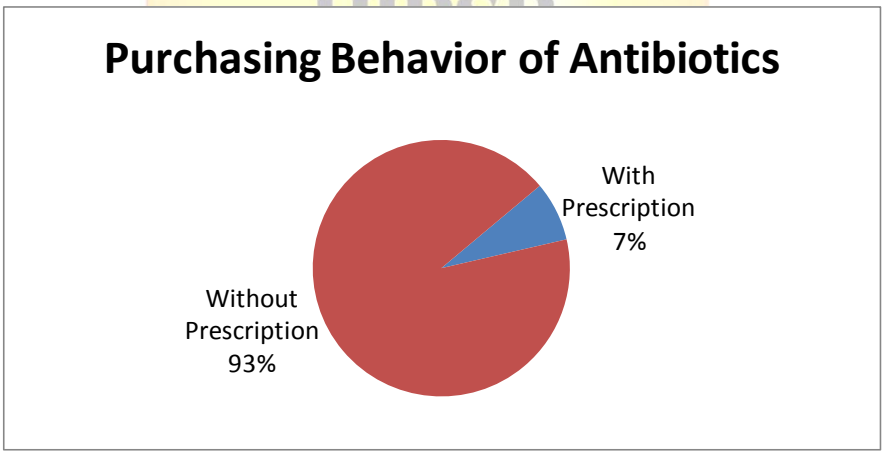

Fig. 3: Purchasing behavior of antibiotics (prescription or without prescription)

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Dispensing behavior of antibiotics (prescription or without prescription)

94% drug sellers sold antibiotics to the patients without prescription and just 6% follow the prescription.

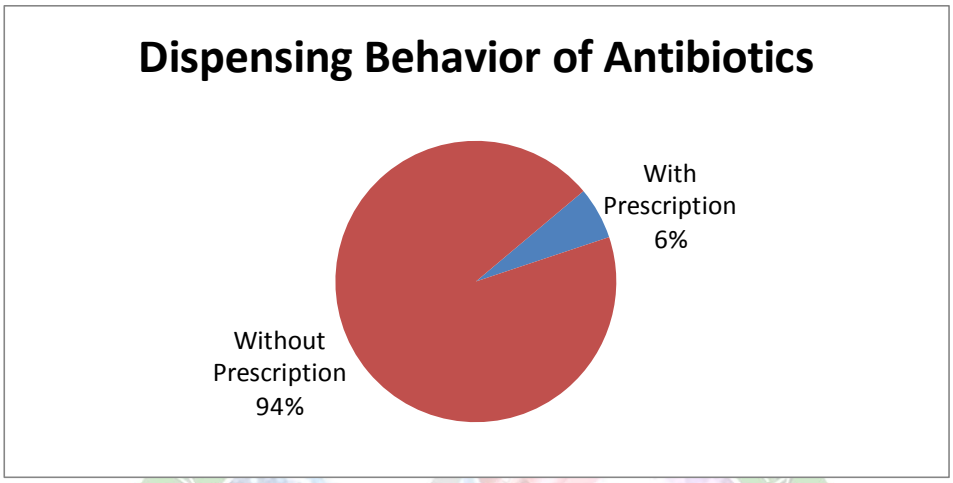

Fig. 4: Dispensing behavior of antibiotics (prescription or without prescription)

Purchasing of full course of antibiotics

Only 11% purchased full course of antibiotics and rest of them did not.

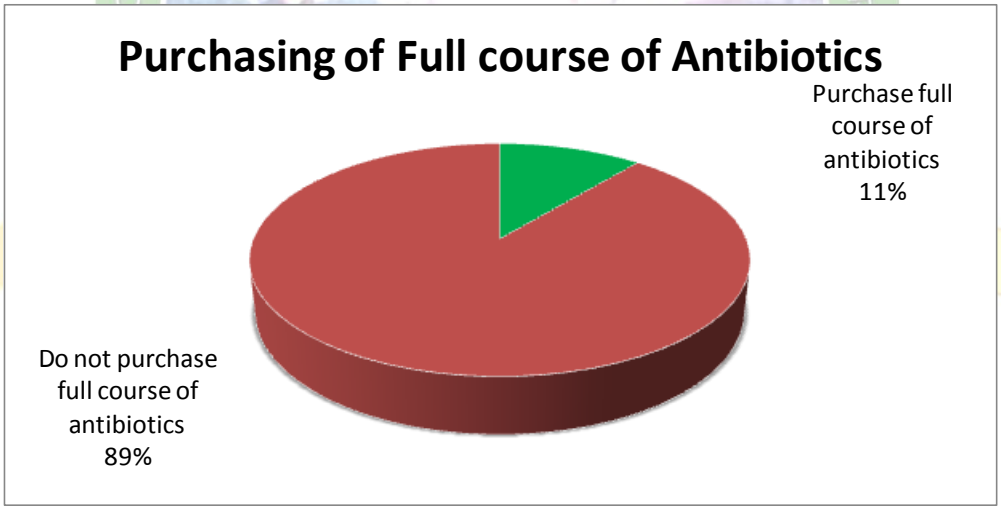

Fig. 5: Purchasing of full course of antibiotics

DISCUSSION

It was very alarming that, patients and drug sellers buy and sell antibiotics without prescription. Again the do not buy the full course of antibiotics. If the use of maximum tolerable dose of an antibiotic fails to halt the growth of bacteria then the bacteria is said to be resistant and the situation will be termed as antibiotic resistance. A study says, both overprescribing and under prescribing of antibiotics are harmful practices; overprescribing is associated with increased side

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effects, excessive expense and ultimately emergence of resistant organism whereas under prescribing leads to ineffective treatment [4,5]. Again, cefuroxime and other higher class drugs are prescribed to the patients instead of first line choice of drugs. It may cause serious damage and antibiotic resistance to the patients. It is also related with the costs. Antibiotic resistance is a direct consequence of antibiotic use . And to control that antibiotic use an antibiotic policy is a must. The optimal antibiotic control measures remain to be described and probably vary between institutions. Nevertheless, various control measures have been shown to be useful in reducing costs of therapy and total amounts of prescribing, while maintaining quality of care. More recently, interest has turned to whether antibiotic policies can reduce the spread of resistance and even reverse current high levels. Early studies indicated this was feasible, but mathematical models and the recent discovery of the role of transposons and integrin in multi-drug resistance have both cast doubt on likely future success in this area. Nevertheless, there have been some major successes in recent studies, both in the community and hospital. While cross-infection is a major impediment to control of resistance, there is little doubt that careful antibiotic prescribing can curtail the emergence and reduce the prevalence of resistance. It is evident that while antibiotic resistance determinants are much older than the modern era of chemotherapy, their maintenance and spread in our healthcare institutions are dependent on the unrestrained antibiotic prescribing that is prevalent. Much attention is now directed towards establishing whether or not antibiotic control measures can reduce current levels of resistance rather than just halting its spread

CONCLUSION

It was found from the study that, very few drug sellers have full idea on antibiotic resistance. The knowledge of antibiotic resistance among patient is even lower. Many patients go to drug sellers to purchase antibiotics without prescription and most of the drug sellers also dispense antibiotics without any prescription due to lack of knowledge about antibiotic resistance. This survey was small but precise that targeted the patients and drug sellers. A larger study in this topic may prove to be even more useful.

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