

Antibiotic Self-Medication among 2nd year MBBS Students of CMH Lahore Medical College

NAZIA RASHID¹, WARDAH SIDDIQUE², SEHRISH ZAFFAR³, LUBNA AMER⁴, IRAM KAMAL⁵, SOFIA ABBASI⁶

¹Assistant Professor Dept. of Pharmacology, Fatima Jinnah Medical university, Lahore

²Assistant Professor Dept of Pharmacology, Lahore Medical and dental college, Lahore

³Assistant Professor Dept of Pharmacology, CMH Lahore medical college

⁴Associate Professor Dept of Pharmacology, Fatima Jinnah medical university, Lahore

^{5,6}Senior Demonstrator Dept of Pharmacology, Fatima Jinnah Medical university, Lahore

Correspondence to Dr. Nazia Rashid, Email: dr.naziaqamar@yahoo.com, Phone. 03234140131

ABSTRACT

Self-administration of antibiotics is one of the major reasons for antibiotic resistance in developing countries. Antibiotics are freely available as over the counter drugs in pharmacies. Medical students who are the future medical professionals are also involved in antibiotic self-administration at an alarming rate. There is limited local data available on antibiotic self-administration among medical students. Keeping these factors in view, we have done a survey-based research project on second year MBBS students. Among these students 46(41.18%) admitted to use antibiotics for different ailments in previous two months. Students have used a wide range of antibiotics from almost all antibiotic drug group. Only 13(28.16%) students had some knowledge about the side effects of these antibiotics and rest 33(71.73%) were unaware of the adverse and side effects of these drugs. The prevalence of antibiotic self-medication in medical students was found to be alarmingly high. Effective strategies involving regulatory enforcement prohibiting sales of antibiotics without prescription should be implemented along with educational interventions for health professionals and the public.

Keywords: Self medication, antibiotics, medical students

INTRODUCTION

Self-medication is defined as the selection and use of medicines by individual to treat self-recognized or self-diagnosed conditions or symptoms¹. Self-medication with drugs is a widely used practice in both developing as well as developed countries. The frequency of antibiotic self-administration ranges from 24% to 73.9% in Africa, 36.1% to 45.8% in the Middle East, 29% in South America, 4% to 75% in Asia. In comparison, lower prevalence rate of antibiotic self-administration has been reported in developed countries with 3% in northern Europe, 6% in central Europe, and 19% in southern Europe². If followed correctly, self-medication relieves acute pain, decreases treatment cost and also reduces burden on health care system³. Self-medication involves getting a medicine without a prescription, or using old prescription, sharing medications with others such as friends and family members, or utilizing a left over medicine.⁴ People also acquire information regarding antibiotics from internet or directly from pharmacies and medical stores which don't ask for prescriptions⁵, other reasons for self-medication include previous good experience of treating similar ailment and promotions by pharmaceutical companies⁶. An easy access and availability of all sorts of medicines including analgesics, multivitamin, anti-emetics, anxiolytics and even antibiotics without prescription is also an important factor for self-medications⁷ which usually done for fever, diarrhea, sore throat, tonsillitis, malaria etc⁸.

However, self-medication with antibiotics may lead to unnecessary use of antibiotics, misdiagnosis, inappropriate dosage and duration of drug intake, adverse drug reactions, drug interactions and drug resistance⁹. Antibiotic

drug resistance is a global dilemma now days. Not only non-medical people are involved in self-medication but also medical students are highly involved in practicing self-medication with antibiotics¹⁰. Keeping all these factors in view, a study was conducted among second year MBBS students of CMH Lahore medical college to find out the prevalence of antibiotic self-medication.

MATERIAL AND METHODS

The study was a cross sectional questionnaire-based study, which was carried out on students of second year MBBS in CMH Lahore Medical College Lahore, from April 2018 till October 2018, over a period of 6 months. After informed consent, a questionnaire was distributed to 123 students, who were willing to participate in the study, after their practical class. Second year class was selected because pharmacology is not included in their course yet and hence, they have limited knowledge about drugs. The questionnaire was developed using similar studies as references^{1-3,5}. It was distributed to five colleagues to ensure reliability and validity. It consisted of both open and closed ended questions. The lead question was about having practiced any antibiotic self-administration in previous two months? Questions about name of antibiotic, indication for use, route of administration, duration of treatment and knowledge about adverse effect were asked from students. The data was entered in SPSS version 16. Results were expressed as frequencies and percentages.

RESULTS

One hundred and twenty-three forms were filled and returned by the students. Response rate was 100%. Age of students was in range of 18-25 years. There were thirteen

Received on 12-10-2020

Accepted on 03-01-2021

students who were suffering from some chronic ailment like asthma, depression so they were excluded from study. Among respondents, 65(60.86%) were males and 45(39.13%) were females. There were 46(41.18%) students who used antibiotics in previous two months. The antibiotics used most commonly, along with their respective frequencies, are shown in Table 1.

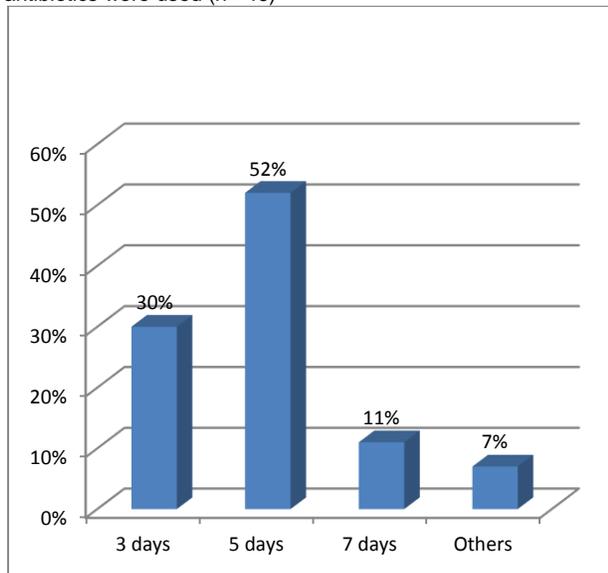
Tab 1: Frequency and percentage of different types of antibiotics used for self-medication (n=46)

Antibiotics used	n	% age
Augmentin	17	39. 6%
Klaricid	5	10.86%
Leflox	5	10.86%
Amoxil	3	6.5%
Flagyl	3	6.5%
Cefspan	3	6.5%
Novidat	3	6.5%
Avelox	1	2.17%
Macrobac	1	2.17%
Entimazole	1	2.17%
Nezkil	1	2.17%
Bnzoyl peroxide	1	2.17%
Fucidin	1	2.17%
Vibramycin	1	2.17%
Azomax	1	2.17%
Tetracycline	1	2.17%

Students came to know about these drugs majorly from previous prescriptions 31(67.39%) and from pharmacies 15(32.60%). They used antibiotics for fever 20(43.47%), respiratory diseases 9(19.5%), gastrointestinal diseases 7(15.21%) and some other conditions 10(21.73%), as shown in Fig. 1.

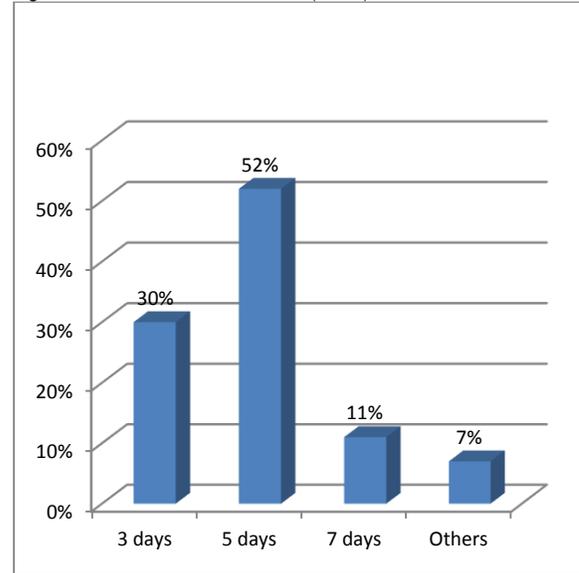
Route of administration was mainly oral 44(95.6%) or topical 2(4.34%). Duration of treatment was ≤3 days 13(28.2%), ≤ 5 days 23(50%), ≤ 7 days 5(10.86%) and other 3(6.52%), as shown in Fig. 2.

Fig 1: Frequencies and percentage of conditions for which antibiotics were used (n= 46)



Only few students 13(28.26) had knowledge about adverse effects of the antibiotic used and rest 33(71.73%) were unaware of adverse effects of antibiotic they used. Comparatively a greater number of male students was indulged in practice of antibiotic self-administration i.e., 60.86%, than females (39.13%). But the difference was not statistically significant (p-value 0.86).

Fig 2: Duration of antibiotic use (n=46)



DISCUSSION

Unnecessary use of antibiotics is a leading cause of antibiotic resistance. The frequency of antibiotic self-administration is higher in our part of the world as compared to others such as Africa¹¹. Male gender is more commonly involved in practice of self-administration of antibiotics as also observed by Joseph O Fadare³.

This cross-sectional study was performed to observe the practice of antibiotic self-medication amongst undergraduate medical students of CMH Lahore Medical College. According to this study, 41.2% of the participants were involved in self-medication for the relief of minor gastric or respiratory ailments. This is in concordance with the results of Misau et al., in which 41% of medical students were found to practice antibiotic self-medication¹². Similarly, study done by Patil et al shows that 34% of medical students self-administer antibiotics⁵.

According to the results of this study, students generally come to know about the drugs from prescriptions obtained from previous ailments. Pharmacists at drug stores also help the students to choose an antibiotic. They use antibiotic for common ailments such as fever and gastrointestinal disease, which might be of viral origin and do not require the use of antibiotics. Our results also showed that even the medical students do not take medicine for recommended duration, which is also a risk factor for rapid emergence of antibiotic resistance.

Even a brief exposure to antibiotics leads to disturbance of microbiota for a long time and may lead to serious consequences such as autoimmune disorders,

metabolic disorders and malnutrition¹³. Antibiotics are also associated with serious adverse drug reactions which may be fatal sometimes, such as anaphylactic reaction. They may cause temporary or permanent damage to central nervous system, cardiovascular system, and gastro intestinal system. Skin problems including photosensitivity are also associated with antibiotics¹⁴. In addition to emergence of antibiotic resistance and adverse drug reaction antibiotic self-administration is also a financial burden¹². Therefore, antibiotics should be used only after prescribed by a consultant, for an appropriate dosage and duration of time. Otherwise, it may lead to serious consequences such as toxicity and drug resistance.

CONCLUSION

Antibiotic self-medication among medical students is a quite disturbing and alarming situation. A strict legislation is required to stop sale of drugs without prescription. Moreover, awareness amongst population, including medical students, is required to stop self-medication with antibiotics.

REFERENCES

1. Karimy M, Rezaee-Momtaz M, Tavousi M, Montazeri A, Araban M. Risk factors associated with self-medication among women in Iran. *BMC public health*. 2019 Dec 1;19(1):1033.
2. Pan H, Cui B, Zhang D, Farrar J, Law F, Ba-Thein W. Prior knowledge, older age, and higher allowance are risk factors for self-medication with antibiotics among university students in southern China. *PloS one*. 2012 Jul 20;7(7):e41314.
3. Alshogran OY, Alzoubi KH, Khabour OF, Farah S. Patterns of self-medication among medical and nonmedical University students in Jordan. *Risk management and healthcare policy*. 2018; 11:169.
4. Nepal G, Bhatta S. Self-medication with antibiotics in WHO Southeast Asian Region: a systematic review. *Cureus*. 2018 Apr;10(4).
5. Patil SB, Nagaiah BH, Raikar SR, Rao V. Self-medication practices among 2nd year medical students in a rural medical college of Telangana state. *National Journal of Physiology, Pharmacy and Pharmacology*. 2018;8(4):501-6.
6. Marwa KJ, Njalika A, Ruganuzi D, Katabalo D, Kamugisha E. Self-medication among pregnant women attending antenatal clinic at Makongoro health centre in Mwanza, Tanzania: a challenge to health systems. *BMC pregnancy and childbirth*. 2018 Dec 1;18(1):16.
7. Aziz MM, Masood I, Yousaf M, Saleem H, Ye D, Fang Y. Pattern of medication selling and self-medication practices: A study from Punjab, Pakistan. *PloS one*. 2018 Mar 22;13(3):e0194240.
8. Sunny TP, Jacob R, Krishnakumar K, Varghese S. Self-medication: Is a serious challenge to control antibiotic resistance? *National Journal of Physiology, Pharmacy and Pharmacology*. 2019;9(9):821-7.
9. Idoko CA, Omotowo BI, Ekwueme OE, Chidolue I, Ezeoke U, Ndu AC, Okeke C. Prevalence and pattern of self-medication among medical students in a Nigerian University. *International Journal of Medicine and Health Development*. 2018 Jan 1;23(1):189.
10. Jindal M, Sharma RK, Lata S, Sharma B. Self-medication practice of antihistaminics H1 blocker among undergraduate medical students in a tertiary care hospital. *National Journal of Physiology, Pharmacy and Pharmacology*. 2019;9(3):227-30.
11. Mir SA, Ahangar J, Shakeel D. Comparative assessment of antibiotic self-medication practices among under-graduate medical students and general population. *International Journal of Research in Medical Sciences*. 2019 Dec;7(12):4563.
12. Misau YA, Mohammed A, Jibrin YB, Gwalabe SA, Usman SU, Faruk BM, Mogere D, Mbaruk SA. Antibiotics self-medication among medical students in a new medical college at Abubakar Tafawa Balewa University Bauchi, Nigeria. *Pyramid Journal of Medicine*. 2019;2(2).
13. Neuman H, Forsythe P, Uzan A, Avni O, Koren O. Antibiotics in early life: dysbiosis and the damage done. *FEMS microbiology reviews*. 2018 Jul;42(4):489-99.
14. Trevor AJ, Katzung BG, Masters SB, Kruidering-Hall M. *Pharmacology examination & board review*. New York: McGraw-Hill Medical; 2010.