ISSN: 0975-8585

Research Journal of Pharmaceutical, Biological and Chemical Sciences

Antibiotics as Self Medication amongst Medical Students

Jitendra Patel*, Rajesh Jha, Sangita Totade, Vaibhav Gupta, Chetna Gupta, Pallavi Nema

Department of Pharmacology, Jawaharlal Nehru Medical College, DMIMS (Deemed University), Sawangi (Meghe), Wardha-442004. Maharashtra.

ABSTRACT

Self medication is defined as the utilization of drugs to treat self-diagnosed disorders or symptoms, or the irregular or continuous use of a prescribed drug for chronic or repeated diseases or symptoms. The main problem with self medication with antimicrobials is the emergence of pathogenic resistance. Antimicrobial resistance is an existing problem world-wide, mainly in developing countries. The aim and objective of this study was to evaluate the knowledge regarding self medication amongst medical students of J. N. Medical College, Sawangi (Meghe), Wardha. This was a questionnaire based study of 3 month duration. After collecting signed Informed Consent, A prevalidated questionnaire was distributed to 150 students. The results of this study showed that out of 150 students 106 (70.66%) students used antibiotics as self medication, most common reason for self administration of antibiotics was loose motion 33 (31.13%). In this study we observed that the most common source of information regarding self medication were senior students 32 (30.19%) and most common antibiotics used as self medication was metronidazole 26 (24.53%). The findings from this study highlights the striking prevalence of self medication among medical students, the lack of knowledge and the risks associated with them. We recommend that a holistic approach must be taken to prevent this problem from escalating which would involve awareness and education regarding the implications of self medication, strategies to prevent the supply of medicines without prescription by pharmacies and strict rules regarding pharmaceutical advertising.

Keywords: Antibiotics, Self medication, Resistance, Medical students, Questionnaire study.

Corresponding author

ISSN: 0975-8585

INTRODUCTION

Self medication is defined as the utilization of drugs to treat self-diagnosed disorders or symptoms, or the irregular or continuous use of a prescribed drug for chronic or repeated diseases or symptoms [1]. A major deficit of self medication is the lack of clinical assessment of the condition by a qualified medical professional which could result in overlooked diagnosis and hindrances in appropriate treatments [2]. The chemotherapy of bacterial infections depends on the isolation of the aberrant agent, categorization of the agent's antibiotic susceptibility and bringing the suitable antibiotic to the site of infection in adequate quantities to either kill the bacteria (bactericidal) or modify it to permit the body's immune response to eventually kill it [3].

The main problem with self medication with antimicrobials is the emergence of pathogenic resistance. Antimicrobial resistance is an existing problem world-wide, mainly in developing countries where antibiotics are often obtainable without prescriptions [4]. The increase in antibiotic resistance in developing countries is of current public concern as it results in multiple resistant organisms leading to infections not easy to treat [5]. The determinants of self medication with antibiotics in low-income countries mainly include over-the-counter sale of antibiotics, the cost of medical consultation, lack of agreement with medical practitioners, and misconception concerning the effectiveness of antibiotics [6-8].

Medicine retailers play an important role, especially at the community level, in developing countries. They constitute a limited number of community pharmacies and numerous patent medicine stores [9]. Medicine vendors in these medicine outlets fill the gap created by inadequate skilled health professionals (Pharmacists) required for the procurement, storage and distribution of medicine [10].

The inappropriate use of antimicrobial drugs may result in a waste of resources, increased resistance of pathogens, serious health hazards, prolong suffering, increases in adverse reactions and drug interactions, and also delays in getting proper treatment when there is misdiagnosis [11-13].

On other hand, the use of antimicrobial drugs without medical guidance may lead to the use of insufficient dosages or incorrect or unnecessary drugs [14].

Self medication and the use of leftover drugs are widespread in countries where drugs are sold without prescriptions [15-16].

This study was conducted to find out the knowledge about dose, duration of therapy, adverse effects of medicine used as self medication and to know the source of information of medicine used as self medication.

ISSN: 0975-8585

MATERIALS AND METHODS

This was a questionnaire based study of 3 month duration and locus of study was Department of Pharmacology, Jawaharlal Nehru Medical College, Sawangi (Meghe), Wardha.

After collecting signed Informed Consent, A prevalidated questionnaire was distributed to 150 students of M.B.B.S. second professional of Jawaharlal Nehru Medical College, Sawangi (Meghe), Wardha.

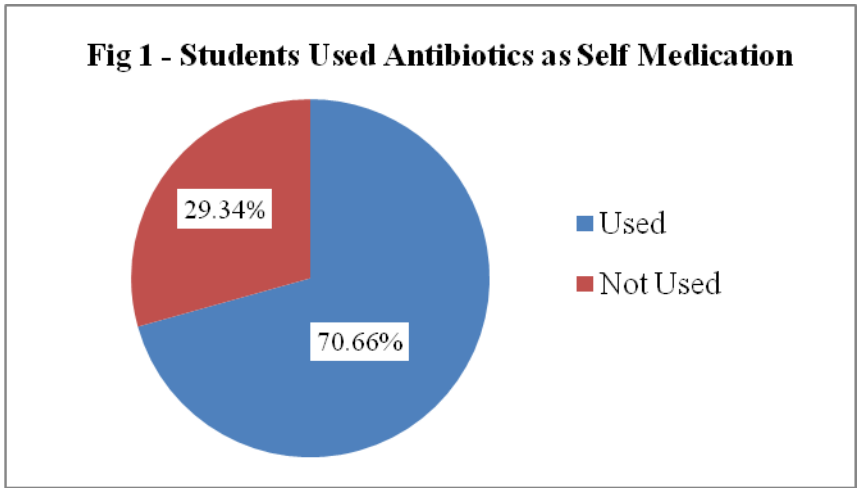
The questionnaire consists of specific questions regarding the knowledge about dose, duration of therapy, adverse effects of medicine used as self medication and to know the source of information of medicine used as self medication.

RESULTS

Results are divided into five groups :

Group A : No. of students used antibiotics as self medication (Fig-1).

1. Out of 150 students 106 (70.66%) students used antibiotics as self medication.
2. Rest of 44 (29.34%) students never used antibiotics as self medication.



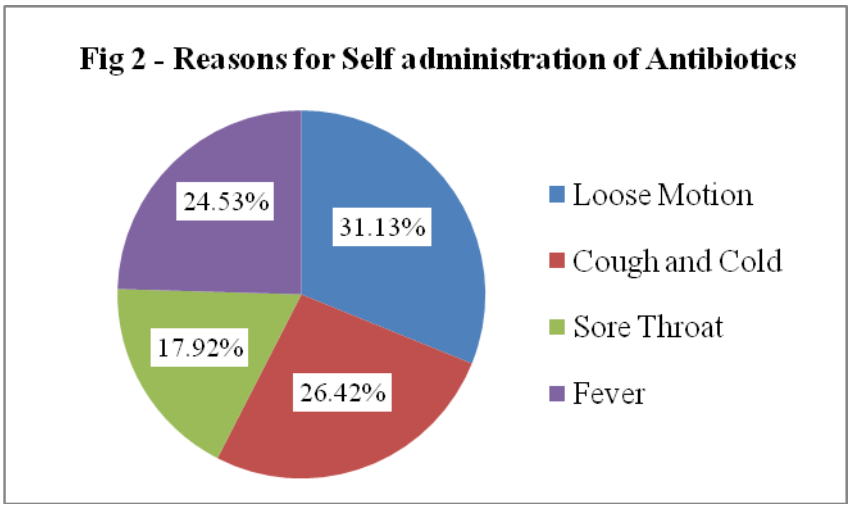
Group B : Most common reason for self administration of antibiotics (Fig-2).

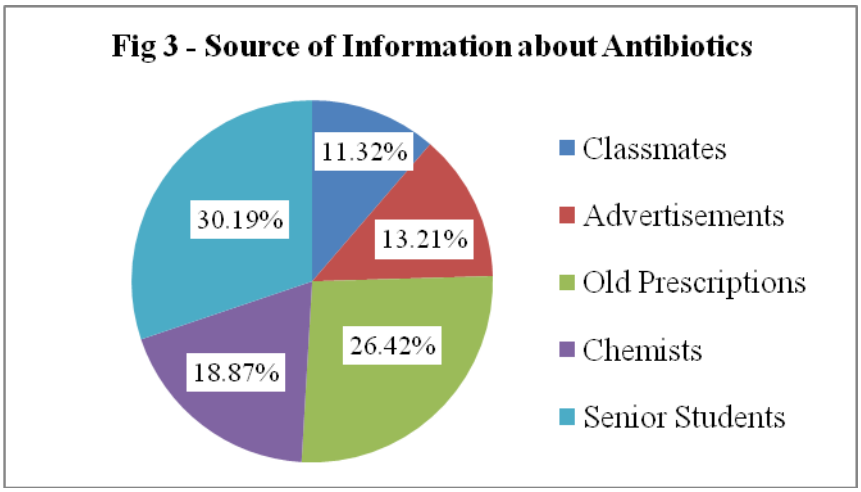
1. Loose motion – 33 (31.13%)
2. Cough and Cold – 28 (26.42%)
3. Sore throat – 19 (17.92%)
4. Fever – 26 (24.53%)

Group C : The source of information of antibiotics used as self medication (Fig-3).

1. Classmates – 12 (11.32%)

2. Advertisements – 14 (13.21%)
3. Old Prescriptions – 28 (26.42%)
4. Chemists – 20 (18.87%)
5. Senior students – 32 (30.19%)





Group D : Most common antibiotics used by students as self medication (Fig-4).

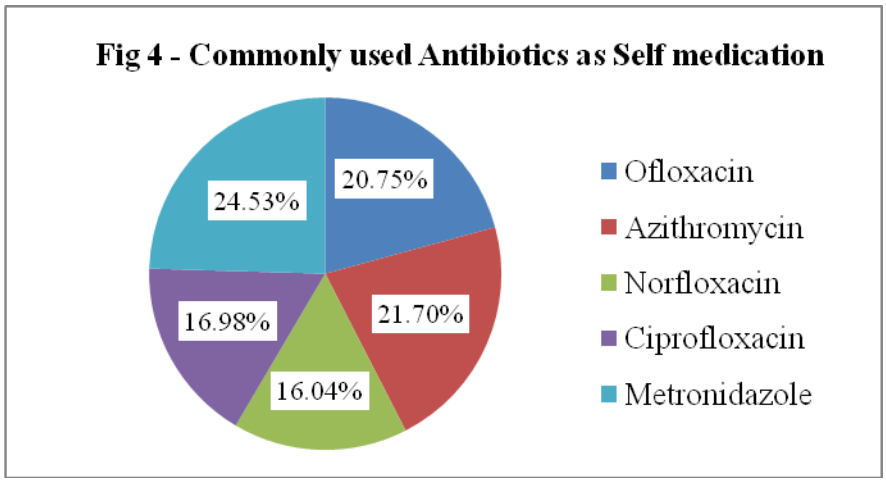
1. Ofloxacin – 22 (20.75%)
2. Azithromycin – 23 (21.70%)
3. Norfloxacin – 17 (16.04%)
4. Ciprofloxacin – 18 (16.98%)
5. Metronidazole – 26 (24.53%)

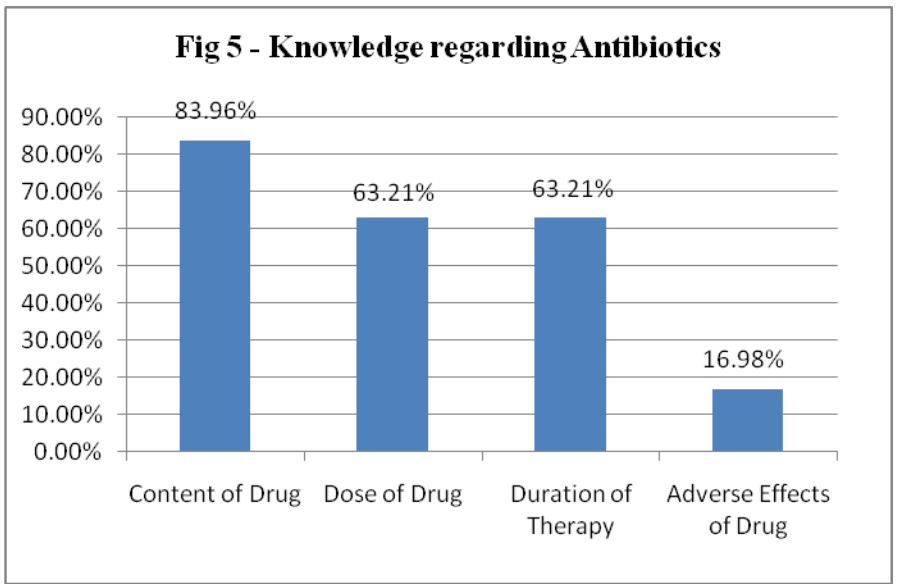
Group E : Knowledge of students about antibiotics used as self medication (Fig-5).

1. 89 (83.96%) students know content of drug.
2. About 67 (63.21%) students know dose of drug and duration of therapy.

ISSN: 0975-8585

3. But only 18 (16.98%) students know the adverse effects of drug.





DISCUSSION

The findings from this study highlights the striking prevalence of self medication among medical students, the lack of knowledge and the risks associated with them. The availability of more complex drugs groups such as antibiotics without prescriptions is a source of great concern [17]. Moreover, the practice of self medication often has many adverse effects and can lead to many problems, including the global emergence of Multi-Drug Resistant pathogens [18], drug dependence and addiction [19], masking of malignant and potentially fatal diseases [20], hazard of misdiagnosis [21], problems relating to over and under dosaging [22], drug interactions [23] and tragedies relating to the side effect profile of specific drugs [24]. The

challenge in controlling the problem of self medication is to achieve the necessary high level of consumer safety. It may be recommended that by monitoring usage of self medication, in addition to data recording and education, safe and effective use of such medicines can be promoted.

CONCLUSIONS

Self management of acute, intermittent and long-term conditions is likely to become more extensive in the future. A balance needs to be struck between safety and patient autonomy. Greater patient and public involvement in formulating both policy and practice against the drugs used as self medication will be needed.

We recommend that a holistic approach must be taken to prevent this problem from escalating which would involve (i) awareness and education regarding the implications of self medication (ii) strategies to prevent the supply of medicines without prescription by pharmacies (iii) strict rules regarding pharmaceutical advertising.

ACKNOWLEDGEMENTS

The authors would like to thank second professional medical students of J. N. Medical College, Sawangi (Meghe), Wardha for helping in this study.

REFERENCES

[1] World Health Organization: Guidelines for the regulatory assessment of Medicinal Products for use in self-medication. WHO/EDM/QSM/00.1, 2000.
[2] Hamel MJ, Odhacha A, Roberts JM, Deming MS. Bull World Health Organ 2001; 79(11):1014-1023.
[3] Behrman RE, Kliegman RM, Jenson HB. Nelson Essentials Textbook of pediatrics third edition W.B. Saunders company Philidelphia. 2000.
[4] Chalker J. Bull World Health Organ 2001;79(4):313-320.
[5] World Health Organization. Global strategy for Containment of Antimicrobial Resistance: World Health Organization, Communicable Disease surveillance and Response (CSR). WHO/CDS/CSR/DRS/ 2001.2, 2001.
[6] Lansang MA, Lucas-Aquino R, Tupasi TE, Mina VS, Salazar LS, Juban N, et al. J Clin Epidemiol 1990;43(1):61-67.
[7] Saradamma RD, Higginbotham N, Nichter M. Soc Sci Med 2000. Mar; 50(6):891-903.
[8] Radyowijati A, Haak H. Soc Sci Med 2003. Aug;57(4):733-744.
[9] Goodman C, Brieger W, Unwin A, Mills A, Meek S, Greer G. Am J Trop Med Hyg. 2007;77(Suppl 6):203–18.
[10] Adikwu MU. Health Policy Plan. 1996;11:202–5.
[11] Temu MJ, Kaale E, Marawiti M. Afr Health Sci 2006. Mar;6(1):43-48.
[12] Kiyingi KS, Lauwo JA. World Health Forum 1993;14(4):381-384.

[13] Reeves DS, Finch RG, Bax RP, Davey PG, Po AL, Lingam G, et al. J Antimicrob Chemother 1999;44(2):163-177.
[14] Thomas JK, Forrest A, Bhavnani SM, Hyatt JM, Cheng A, Ballow CH, et al. Antimicrob Agents Chemother 1998;42(3):521-527.
[15] Stratchounski LS, Andreeva IV, Ratchina SA, Galkin DV, Petrotchenkova NA, Demin AA, et al. Clin Infect Dis 2003;37(4):498-505.
[16] Okumura J, Wakai S, Umenai T. Soc Sci Med 2002;54(12):1875-1886.
[17] Nordeng H, Havnen GC. Acta Obstet Gynecol Scand 2005; 84: 26-33.
[18] Bauchner H, Wise P. Lancet 2000; 355: 1480-84.
[19] Calabresi P, Cupini LM. Trends Pharmacol Sci 2005; 26: 62-8.
[20] French L, Horton J, Matousek M. J Fam Pract 2004; 53: 805-14.
[21] Ashina S, Zeeberg P, Jensen RH, Ashina M. Ugeskr Laeger 2006; 168: 1015-9.
[22] Assael L. J Oral Maxillofac Surg 2006; 64: 1331-2.
[23] Neafsey PJ. Home Healthc Nurse 2004; 22: 88-98.
[24] Tackett B, Smith M, Nedorost S. J Am Acad Dermatol 2006; 54: 182.