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Perception and practices of self medication of antibiotics among undergraduate students of a medical college

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Abstract

Background: the study was conducted to analyze the perceptions regarding self medication of antibiotics among medical students and to determine the practice of antibiotic self-medication among medical students.

Methods: This is a cross-sectional, questionnaire-based study which was conducted among the second year, third year and final year medical students of Rajarajeswari Medical College and Hospital, Karnataka. The data obtained was analyzed using descriptive statistics and were expressed in proportions and percentages.

Results: Among 341 undergraduates participated in the study, 223(65.39%) were female and 118(34.60%) were male. The prevalence of self-medication among the medical students was 273(81.25%), whereas 63(18.75%) said that they don't follow or encourage self-medication. The most important indication for antibiotic self-medication was sore throat (60.43) followed by fever (44.68) and diarrhea (39.56). The most common class of antibiotic self-medicated was Penicillin group (46.15%) followed by fluoroquinolones (31.13%).

Conclusions: our questionnaire based study reveals a higher prevalence of self-medication of antibiotics among the undergraduate facilitated by easy availability of drugs and information from textbook. The major and important reason for misuse of antibiotics is lack of proper knowledge on antibiotics and antibiotic resistance. It is important to spread the information and knowledge about antibiotic misuse by self-medication and its consequent effects. Hence, incorporating a special course on rational prescription of antibiotics becomes necessary that can emphasizes more on the advantages and disadvantages of self-medication rather than advance of knowledge alone.

Keywords: Antibiotics, Self-Medication, Undergraduate Students.

Introduction

Obtaining and consuming drugs without the advice of a physician either for diagnosis, prescription or surveillance of treatment is defined as Self-medication,[(1)] which includes resubmitting old prescriptions to purchase medicines, acquiring medicines without a prescription, sharing medicines with relatives or members of one's social circle or using leftover medicines stored at home.

Though there is much concern about the irrational use of drugs,[(2)] the prevalence rates are very high in developing countries.[(3)] Self-medication is now increasing and considered as a component of self-care.[(4)] Most patients prefer medicines such as antibiotics which provide rapid relief of disease symptoms which can be used without consulting a medical professional. However, these medicines may possess some serious adverse effects whose occurrence can potentially outweigh their benefits.[(5)]

World Health Organization (WHO) has pointed out that responsible self-medication can prevent and treat conditions that do not require medical consultation, hence provide a cheaper and alternative for treating common illnesses.[(4)] Authentic medical information is very necessary for practicing self-medication, if not it can cause increase in resistance to pathogens which can lead to serious health hazards.[(6)] The present generation is extensively exposed to media and increase in the advertisement by pharmaceutical companies poses a larger threat. This becomes an important concerns for incorrect self-diagnosis, drug interaction.[(7,8)]

Medical students are and not eligible and it is illegal to prescribe medicines during their undergraduate years despite their knowledge about the pathophysiology and therapeutics.[(9)] Recent studies have shown self-medication to be common among medical students and the incidence was high in medical colleges of South India (92%),[(10)] Karachi (76%)[(11)] and Egypt (55%).[(12)]

Self-medication assumes a special significance among medical students as they are the future medical practitioners and play major role in making the patients understand about the advantages and disadvantages of self-medication. Hence this study aims at assessing the knowledge, attitude and practice regarding antibiotic self-medication among the undergraduate medical students.

Objectives

1. To assess the perceptions regarding self medication of antibiotics among medical students.
2. To determine the practice of antibiotic self-medication among medical students.

Methodology

Our present study is a cross-sectional, questionnaire-based study which was conducted among the second year, third year and final year medical

students of Rajarajeswari Medical College and Hospital [RRMCH], Karnataka, after obtaining institutional ethical clearance. All students willing to participate were included in the study and those with incompletely filled questionnaires were excluded from the study. The study was conducted from September 2014 to October 2014.

The study was conducted using a predesigned semi structured questionnaire developed after an extensive review of literature. The questionnaire was circulated among a group of faculty members at RRMCH, for their inputs regarding validity of the statements and their ease of comprehension and among six clinical students comprehension and readability. The questionnaire had 3 sections; Section A consisted of questions regarding gender, year of the study and whether they self-medicated or not. If their response was 'yes' to self-medication in the last one year they were asked to fill Section C which consisted of questions regarding the knowledge and practice of self-medication. Section B consisted of questions related to perception regarding self-medication. The students who did not self-medicate were instructed to fill in only Section B. The students were briefed on the objectives of the study and informed consent was obtained. The questionnaires were thoroughly assessed for completeness and only the completed Questionnaires were considered for the final results. The data obtained was analyzed using descriptive statistics and were expressed in proportions and percentages.

Results

A total of 341 undergraduates participated in the study, out of which 223(65.39%) were female and 118(34.60%) were male. 163 (47.80%) were from 2nd year, 92(26.97%) from 3rd year 86(25.21%) were from final year. Among the 341 questionnaire form, 336 were completely filled and the remaining 5 incompletely filled questionnaire were excluded. Out of 336 eligible participants, the majority (313) followed allopathic and the rest (23) followed Ayurvedic medicines.

The prevalence of self-medication among the medical students was 273(81.25%), whereas 63(18.75%) said that they don't follow or encourage self-medication. The most important indication for antibiotic self-medication was sore throat (60.43) followed by fever (44.68) and diarrhea (39.56) (Fig. 1)

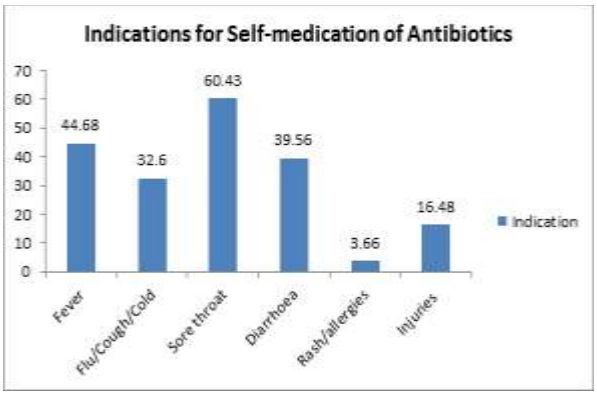

Fig. 1: Showing Indications for self-medication of antibiotics

The participants self medicate with antibiotics at an average of 3 times per year. The most common reason being illness too trivial for consultation (80.95%) followed by past experience (65.20%). The most common class of antibiotic self-medicated was Penicillin group (46.15%) followed by fluoroquinolones (31.13%). [Fig. 2]

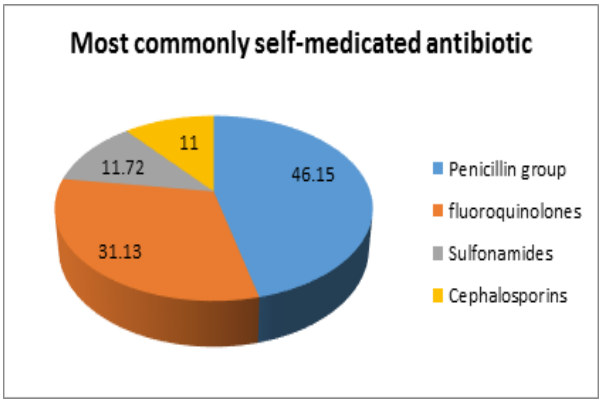

Fig 2: Showing commonly self-medicated antibiotics by respondents

Most (61.17%) of the participants selected antibiotics based on medical knowledge obtained through text books followed by information obtained from seniors (44.68%) and Internet (35.16%). (Table 1)

Table 1: Respondents source of information regarding antibiotics selection: (n=273)

Source of Information*	Frequency	Percentage
Textbooks	167	61.17
Pharmacist	11	4.02
Seniors	122	44.68
Internet	96	35.16

*Multiple responses

The most common reason for not completing the full course of antibiotics was symptoms subsided (74.00%) followed by adverse reactions (13.92%). Few

of them switched for the other antibiotic during the course and main reason given was 'antibiotic didn't work'. (Table 2)

Table 2: Reason for not completing the full course of antibiotics by respondents (n=273)

Reasons	Frequency	Percentage
Switching over to other antibiotics	19	6.96%
Symptoms subsided	202	74.00%
Antibiotics run out	14	5.12%
Adverse reactions	38	13.92%

All the 'respondents not practicing self-medication' gave correct responses regarding self-medication Majority of them gave correct responses regarding antibiotics use and most of them were aware of antibiotic resistance whereas among 'respondents practicing self-medication' none of them had proper knowledge about self-medication and they wish to continue self-medicating and though most of them gave correct response regarding antibiotics use, only quarter of them were aware of antibiotic resistance. (Table 3)

Table 3: Respondents perception on self-medication of antibiotics (n=336)

Questions (correct response)	Respondents practicing self-medication (n=273)	Respondents against self-medication of antibiotics (n=63)
Can antibiotics cure bacterial infections? (yes)	226 (82.78%)	60 (95.23%)
Can antibiotic cure viral infections? (no)	127 (46.52%)	58 (92.06%)
Do you think the use of antibiotics will speed up the recovery of cold, cough? (no)	94 (34.43%)	41 (65.07%)
Have you heard of antibiotics resistance? (yes)	71 (26.07%)	37 (58.73%)
Do you think frequent use of antibiotics will decrease efficacy of treatment when using the antibiotic again? (yes)	69 (25.27%)	44 (69.84%)
Self-medication of antibiotics is a part of self- care (No)	0 (0.0%)	63 (100.0%)
Continue with/start self-medication of antibiotics (No)	0 (0.0%)	63 (100.0%)
Advice self-medication of antibiotics to friends (No)	0 (0.0%)	63 (100.0%)

Discussion

The prevalence of self-medication in our study was found to be higher (81.25%), while the other studies conducted within India was shown to be ranging between 57.1% and 92%.[13-16] The majority of the study participants followed allopathic system of medicine which is similar to the observations from other studies of our country.[17,18] In a study from Tamil Nadu[19] most students practiced self-medication and reported that it was time saving, while in Punjab[20] most common reason for self-medication was for quick relief. From other international studies, countries like Ethiopia[21,22] Karachi,[23] and Malaysia[24] the most common reason for self-medication was prior experience with the illness.

Current study textbooks were the common source of information for self medication and this proved to be similar in studies from India[19] and Ethiopia.[21] However, the most common source of information about the drugs used for self-medication was with previous prescription which was reported as in studies conducted in Tamil Nadu[19] and Uttar Pradesh.[25] Penicillin group were the most common class of antibiotics frequently self-medicated in our study. Similar observations were reported in studies conducted exclusively on self-medication with antibiotics.[26-29] Sore throat was the most common indication for antibiotic use in our study. Similar observation was reported in a study from China[30] and Europe.[31]

In this study the most common reason for not completing the full course of antibiotics was symptoms subsided and it was also observed that 'respondents not practicing self-medication' had better knowledge about self-medication, antibiotics use and antibiotic resistance when compared to 'respondents practicing self-medication'.

Conclusion

Our questionnaire based study reveals a higher prevalence of self-medication of antibiotics among the undergraduate facilitated by easy availability of drugs and information from textbook. The major and important reason for misuse of antibiotics is lack of proper knowledge on antibiotics and antibiotic

resistance. It is important to spread the information and knowledge about antibiotic misuse by self-medication and its consequent effects. Hence, incorporating a special course on rational prescription of antibiotics becomes necessary that can emphasizes more on the advantages and disadvantages of self-medication rather than advance of knowledge alone.

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