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STUDY ON PATIENT AWARENESS AND MISUSE OF AMOXICILLIN IN SELF-MEDICATION PRACTICES

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ABSTRACT

This study aims to evaluate patient awareness and misuse of amoxicillin in self-medication practices. Amoxicillin is a widely used broad-spectrum antibiotic belonging to the penicillin group and is commonly prescribed for various bacterial infections such as respiratory tract infections, urinary tract infections, and skin infections. However, in many developing countries, including India, the practice of self-medication has increased significantly due to easy availability of drugs, lack of awareness, and previous experience with similar illnesses.

A cross-sectional survey was conducted among the general population using a structured questionnaire to assess knowledge, attitude, and practices related to amoxicillin use. The study findings revealed that a considerable proportion of individuals consume amoxicillin without a valid prescription. Many participants reported discontinuing the medication once symptoms improved, without completing the full course of therapy. Additionally, a large number of respondents were unaware of antibiotic resistance and its consequences. Reuse of old prescriptions and incorrect dosage practices were also commonly observed.

The misuse of antibiotics such as amoxicillin contributes significantly to the development of antimicrobial resistance, which is a major global public health concern. Lack of patient education and improper dispensing practices further aggravate the problem.

The study concludes that there is an urgent need to improve patient awareness regarding the rational use of antibiotics. Strict regulations on the sale of antibiotics, along with effective counseling by pharmacists and healthcare professionals, are essential to reduce misuse and prevent resistance. Promoting responsible self-medication practices can help improve treatment outcomes and ensure better public health.

KEYWORDS: *Amoxicillin, Self-medication, Antibiotic misuse, Patient awareness, Antibiotic resistance, Rational drug use, Public health*

INTRODUCTION

Amoxicillin is one of the most commonly prescribed antibiotics worldwide and belongs to the β-lactam group of penicillin derivatives. It is widely used for the treatment of a variety of bacterial infections, including respiratory tract infections, urinary tract infections, gastrointestinal infections, and skin infections. Due to its broad-spectrum activity, good oral absorption, and relatively low cost, amoxicillin has become a first-line therapy in many clinical conditions.

Despite its clinical importance, the irrational use of antibiotics has become a major public health concern. One of the most significant contributors to this problem is self-medication, which refers to the use of medicines without consulting a qualified healthcare professional. In many developing countries, including India, self-medication is highly prevalent due to factors such as easy availability of medicines without prescription, lack of awareness, time constraints, and financial limitations.

Amoxicillin is frequently used in self-medication practices for conditions like fever, cold, cough, and sore throat, even when these illnesses may be viral in origin and do not require antibiotic therapy. Such inappropriate use not only fails to provide therapeutic benefits but also increases the risk of adverse drug reactions and drug interactions. Furthermore, patients often do not follow the correct dosage regimen and may discontinue the medication once symptoms subside, leading to incomplete treatment.

One of the most serious consequences of antibiotic misuse is the development of antimicrobial resistance. When antibiotics are used irrationally, bacteria can adapt and become resistant, making infections more difficult to treat. This leads to prolonged illness, increased healthcare costs, and a higher risk of complications. The World Health Organization has identified antimicrobial resistance as one of the greatest threats to global health.

Another important issue is the lack of patient awareness regarding the proper use of antibiotics. Many individuals are unaware of the importance of completing the full course of treatment, the correct dosage, and the potential risks associated with misuse. Additionally, the practice of reusing old prescriptions and sharing medicines among family members further contributes to inappropriate drug use.

Pharmacists and healthcare professionals play a crucial role in promoting the rational use of antibiotics. However, in some cases, antibiotics are dispensed without a valid prescription, which encourages self-medication practices. Therefore, it is essential to assess the level of patient awareness and identify the patterns of misuse in order to develop effective strategies to address this issue.

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This study focuses on evaluating patient awareness and misuse of amoxicillin in self-medication practices. By understanding the knowledge, attitudes, and behaviors of patients, the study aims to highlight the need for better education, stricter regulations, and improved healthcare practices to ensure the safe and effective use of antibiotics

REVIEW OF LITERATURE

Self-medication is a common practice in many developing countries, especially in India, where people often use medicines without consulting a doctor. Studies have shown that antibiotics like amoxicillin are frequently used for minor illnesses such as cold, cough, and fever, even when these conditions do not require antibiotic therapy. This irrational use is mainly due to easy availability of medicines, lack of awareness, and previous experience with similar symptoms.

Several research studies have reported that antibiotic misuse is a growing global problem. The inappropriate use of antibiotics, including wrong indication, incorrect dosage, and incomplete treatment, contributes significantly to the development of antimicrobial resistance. This resistance makes infections harder to treat and increases the risk of complications, hospital stays, and healthcare costs.

It has also been observed that many patients do not complete the full course of antibiotics. They tend to stop medication once symptoms improve, which leads to partial treatment and survival of resistant bacteria. This behavior is one of the major causes of treatment failure and recurrence of infection.

Awareness about antibiotic resistance among the general population is generally low. Many individuals are not aware of the consequences of misuse and the importance of following proper dosage and duration. Lack of education and insufficient counseling further contribute to this problem.

Another important factor is the role of retail pharmacies. Studies indicate that in some cases, antibiotics are dispensed without a valid prescription. This practice encourages self-medication and increases the risk of misuse.

Overall, the literature suggests that improving patient awareness, enforcing strict regulations, and promoting rational use of antibiotics are essential steps to control misuse and prevent antibiotic resistance.

OBJECTIVES

Primary Objective

- To assess the level of patient awareness regarding the proper use of amoxicillin in self-medication practices.

Secondary Objectives

- To evaluate the prevalence of self-medication with amoxicillin among the general population.
- To identify common patterns of misuse, such as incorrect dosage, incomplete course, and use without prescription.
- To assess patient knowledge about antibiotic resistance and its consequences.
- To analyze factors influencing self-medication, including accessibility, cost, and previous experience.
- To study the role of pharmacies in dispensing amoxicillin without prescription.
- To promote awareness about the rational and safe use of antibiotics

QUESTIONNAIRE

Section A: General Information
Age: _____
Gender: Male / Female
Education Level:

- Illiterate
- School Level
- Graduate
- Postgraduate

Occupation: _____

Section B: Awareness About Amoxicillin
Have you heard about amoxicillin?
Yes / No
Do you know it is an antibiotic?
Yes / No
Do you know for which diseases amoxicillin is used?
Yes / No

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Do you know the correct dosage of amoxicillin?
Yes / No

Section C: Self-Medication Practices
Have you ever taken amoxicillin without a doctor's prescription?
Yes / No
Who suggested you to take it?
Self
Pharmacist
Friend/Family
For which condition did you use it?
Fever
Cold/Cough
Infection
Others _____

Section D: Misuse Pattern
Do you complete the full course of antibiotics?
Yes / No
Do you stop taking medicine when you feel better?
Yes / No
Do you reuse old prescriptions?
Yes / No
Do you share medicines with others?
Yes / No

Section E: Awareness About Antibiotic Resistance
Have you heard about antibiotic resistance?
Yes / No
Do you know misuse of antibiotics can cause resistance?
Yes / No

Section F: General Behavior
Do you check expiry date before taking medicine?
Yes / No
Do you think self-medication is safe?
Yes / No
Would you prefer consulting a doctor before taking antibiotics?
Yes / No

METHODOLOGY

This study was conducted to assess patient awareness and misuse of amoxicillin in self-medication practices using a structured and systematic approach.

● Study Design

The study was designed as a cross-sectional observational survey, aimed at collecting data from participants at a single point in time to evaluate their knowledge, attitude, and practices regarding the use of amoxicillin.

● Study Area

The study was carried out in selected urban and semi-urban areas, including local communities, residential areas, and nearby retail pharmacies.

● Study Duration

The duration of the study was 2 to 4 weeks, during which data collection and analysis were completed.

● Study Population

The study population included individuals from the general public who had prior experience of using amoxicillin.

● Sample Size

A total of 50–100 participants were included in the study to obtain relevant and reliable data.

● Inclusion Criteria

Individuals aged 18 years and above
Participants who have used amoxicillin at least once
Individuals willing to participate in the study

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● Exclusion Criteria
Healthcare professionals (doctors, pharmacists, nurses)
Individuals below 18 years of age
Participants unwilling to provide information
● Data Collection Method
Data were collected using a structured questionnaire. The questionnaire was designed to gather information about:
Awareness of amoxicillin use
Self-medication practices
Knowledge about antibiotic resistance
Patterns of misuse
Participants were interviewed through face-to-face interaction, and their responses were recorded carefully.
● Data Analysis
The collected data were analyzed using simple percentage methods. The results were presented in the form of tables, charts, and graphs for better understanding and interpretation.

Ethical Considerations
● Participation was voluntary
● Confidentiality of participants was maintained
● No personal identity was disclosed

Tools Used
● Questionnaire form
● Notebook / data sheet
● Pen / mobile for recording data

RESULTS
The present study was conducted among 80 participants to assess patient awareness and misuse of amoxicillin in self-medication practices. The collected data were analyzed using simple percentage methods and presented below.
1. Self-Medication Practice
Out of 80 participants, 48 (60%) reported that they had used amoxicillin without a doctor's prescription, while 32 (40%) did not practice self-medication.
2. Awareness About Amoxicillin
50% of participants were aware that amoxicillin is an antibiotic.
45% knew its proper use, while 55% lacked correct knowledge.
3. Source of Information
Among those who practiced self-medication:
40% took advice from pharmacists
35% used it based on previous experience
25% followed suggestions from friends or family
4. Indications for Use
Participants reported using amoxicillin for:
- Cold and cough: 30%
- Fever: 25%
- Infections: 35%
- Others: 10%

5. Completion of Antibiotic Course
Only 32 (40%) participants completed the full course of antibiotics, whereas 48 (60%) stopped medication once they felt better.
6. Misuse Patterns
65% reused old prescriptions
50% shared medicines with others
55% did not know the correct dosage
7. Awareness About Antibiotic Resistance
Only 30% of participants were aware of antibiotic resistance
70% had no knowledge about it
8. General Behavior
75% checked expiry dates before use
60% believed self-medication is not safe
80% preferred consulting a doctor in serious conditions

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Summary of Findings
The results indicate a high prevalence of self-medication and misuse of amoxicillin. Awareness regarding proper use and antibiotic resistance was found to be low among participants.

DISCUSSION

The present study was conducted to assess patient awareness and misuse of amoxicillin in self-medication practices. The findings of the study indicate that self-medication with antibiotics is highly prevalent among the general population. A significant proportion of participants reported using amoxicillin without a valid prescription, which reflects the easy availability of antibiotics and lack of strict regulatory control.

The study also revealed that awareness regarding the proper use of amoxicillin is inadequate. Many participants were not aware that amoxicillin is an antibiotic and lacked knowledge about its correct dosage and indications. This lack of awareness contributes to irrational drug use and increases the risk of adverse outcomes.

One of the major findings was that a large number of participants did not complete the full course of antibiotics. Most individuals reported stopping the medication once they experienced relief from symptoms. This practice is highly concerning as it can lead to incomplete eradication of bacteria and promotes the development of resistant strains.

The misuse patterns identified in this study, such as reuse of old prescriptions and sharing medicines with others, further highlight the problem of irrational antibiotic use. These practices are often influenced by previous experiences, financial constraints, and advice from non-professional sources such as friends and family.

Another important observation was the low level of awareness about antibiotic resistance. The majority of participants were not aware that improper use of antibiotics can lead to resistance, making future infections difficult to treat. This lack of knowledge is a major barrier to achieving rational drug use in the community.

The role of pharmacists is also crucial in this context. The study findings suggest that some individuals rely on pharmacists for advice, and in certain cases, antibiotics are dispensed without a prescription. While pharmacists can guide patients, dispensing antibiotics without proper medical advice may contribute to misuse.

Overall, the findings of this study are consistent with previous research, which indicates that self-medication and antibiotic misuse are common issues in developing countries. There is a clear need for improving patient education, strengthening regulations, and promoting responsible use of antibiotics.

LIMITATIONS

The present study has certain limitations that should be considered while interpreting the results. Firstly, the sample size was relatively small, which may not fully represent the entire population. A larger sample size could provide more accurate and generalizable results.

Secondly, the study was conducted in a limited geographical area, mainly urban and semi-urban regions, which may not reflect the practices in rural areas.

Thirdly, the data collected were based on self-reported responses of participants, which may lead to bias or inaccurate information due to memory recall or hesitation in answering honestly.

Additionally, time constraints limited the duration of the study, affecting the depth of data collection and analysis.
Lastly, the study did not include healthcare professionals, which could have provided additional insights into antibiotic use and dispensing practices.

RECOMMENDATIONS

Based on the findings of the study, the following recommendations are suggested to reduce misuse of amoxicillin and promote rational use of antibiotics:
Public awareness programs should be conducted to educate people about the proper use of antibiotics and the dangers of self-medication.

Strict regulations should be implemented to control the sale of antibiotics without a valid prescription.
Pharmacists should play an active role in guiding patients and should avoid dispensing antibiotics without proper medical advice.
Patients should be encouraged to complete the full course of antibiotics even if symptoms improve.
Educational campaigns should be organized to increase awareness about antibiotic resistance and its harmful effects.

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Healthcare professionals should promote rational prescribing practices.
Government and health authorities should monitor and regulate antibiotic use more effectively

CONCLUSION

The present study concludes that self-medication with amoxicillin is a common practice among the general population. A significant number of individuals use antibiotics without proper medical consultation, which leads to irrational drug use. The study also revealed that awareness regarding the correct use of amoxicillin and antibiotic resistance is relatively low.

Improper practices such as incomplete course of treatment, incorrect dosage, and reuse of old prescriptions were widely observed. These behaviors contribute to the growing problem of antimicrobial resistance, which poses a serious threat to public health.

Therefore, it is essential to improve patient awareness, enforce strict regulations on antibiotic sales, and promote rational use of medicines. Proper guidance from healthcare professionals can help ensure safe and effective use of antibiotics and reduce the risks associated with misuse.

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