

## KAP on Antibiotic Usage and Resistance among Second Professional Medical Students

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### Abstract

**Introduction:** It is the bacteria and not the human that becomes resistant to antibiotics due to inadequate treatment and acquires ability to withstand antibiotics. The negative effects of antibiotic resistance on treatment outcomes, length of hospital stay, risk of death, and expense of healthcare are raising concerns on a worldwide scale.

**Material & Methods:** A cross-sectional study was conducted at Pacific Institute of Medical Sciences, Udaipur. The data was obtained from second year students batch 2020 after completion of Antibiotic classes. Total 100 students participated in the study. Total 18 Questions given. Data were analyzed using MS Excel 2007. The survey was analyzed as percentage.

**Results:** Students have good knowledge about antibiotics. Compare to knowledge, they have poor attitude & practice towards antibiotic usage & resistance.

**Conclusion:** In our study knowledge about antibiotic students is good. But more education needed to improve attitude & practice among medical students. This will decrease malpractice among future doctors & also help in decrease antibiotic resistance.

**Keywords:** Antibiotic, Resistance.

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### Introduction

It is the bacteria and not the human that becomes resistant to antibiotics due to inadequate treatment and acquires ability to withstand antibiotics, so much so that sometimes they learn to thrive on them. Though antibiotics resistance is a global problem but in developing countries where population has less access to the medical institutions, it appears to a major public health issue.[1] According to reports, it accounts for 7 lakhs deaths worldwide and in addition causes huge economic loss that

ranges between \$2.1 trillion and \$124.5 trillion [2]. Antibiotic resistance is caused by medication errors, self-medication, wastewater pollution, and limited incentives for new drug surveillance, research, and innovation [3-6]. The negative effects of antibiotic resistance on treatment outcomes, length of hospital stay, risk of death, and expense of healthcare are raising concerns on a worldwide scale [7,8]. Medelln is the second biggest city in Colombia and is home to more than 15 tertiary institutions. Due to

widespread overuse of extended-spectrum - lactamase and carbapenemase, Gram-negative bacilli are now able to spread endemically across the city and its hospitals [9,10].

### Prevention of drug resistance

- 1) No indiscriminate and inadequate or unduly prolonged use of AMAs should be made
- 2) Prefer rapidly acting and selective (narrow spectrum) AMAs
- 3) Use combination of AMAs whenever prolonged therapy is undertaken, e.g. tuberculosis, SABA, HIV-AIDS [11].

### Material & methods

#### Results

#### Knowledge

A cross-sectional study was conducted at Pacific Institute of Medical Sciences, Udaipur. The data was obtained from second year students batch 2020 after completion of Antibiotic classes. Total 100 students participated in the study. Total 18 Questions given. Data were analyzed using MS Excel 2007. The survey was analyzed as percentage. Among 18 questions, 10 were based on Knowledge, 5 were based on Attitude & 3 were based on Practice. One question was asked to determine the reasons for underreporting. These Questions were designed based on earlier studies for assessing KAP of Antibiotic resistance. [8-13]

**Table 1: Knowledge based questions**

Questions	Correct (%)	Incorrect (%)
1)Antibiotics are useful for treating bacterial infections.	100	-
2)Antibiotics can cause secondary infections after killing good bacteria	87	13
3)Inappropriate use of antibiotics can lead to antibiotic resistance” and harm patient	94	6
4)Antibiotics are indicated for every kind of pain and inflammation	89	11
5)It is mandatory to finish the full course of antibiotics even if symptoms are improving	93	7
6) Antibiotics are not appropriate for viral infections	40	60
7)Cephalosporins are beta lactam antibiotic	97	3
8)For MRSA ,Vancomycin is used	98	2
9)Antibiotics can cause allergic reaction	94	6
10)Azithromycin is macrolide antibiotic	93	7

**Table 2: Attitude based questions**

Questions	Yes (%)	No (%)
1) Do you take antibiotics only when prescribed by the doctor?	51	49
2) Do you take antibiotics without medical prescription?	56	44
3) Do you have leftover antibiotics at home?	81	19
4) Do you usually use leftover antibiotics without consulting a doctor?	45	55
5) Do you stop taking when you start feeling better?	67	33

**Table 3: Practice based questions**

Questions	Yes (%)	No (%)
1) As patient request, I would prescribe antibiotic	21	79
2)I would prescribe antibiotics even when they are not indicated because there are no time for explanations?	15	85
3) Missing one or two dose of antibiotics does not contribute to resistance	59	41

## Discussion

Antibiotic are drugs used to prevent & treat bacterial infections. Irrational use of antibiotics leads to resistant strain & they spread from population to population. The infection caused by these resistant bacteria is difficult to treat and leads to increased medical costs, hospital stays, and mortality [14].

In Europe antimicrobial stewardship programme (2014) has been introduced by the government for improving antimicrobial prescribing behaviours of doctors. Antimicrobial resistance because of irrational and inadequate use of antimicrobials to control the spread of infections is a major health issue not only in developed but in developing countries also.

In our country antibiotic & antibiotic resistance is taught in second professional MBBS curriculum. Medical students are future doctors so it is necessary to understand them about antibiotic usage & resistance. So, aim of present study to assess their knowledge regarding antimicrobial use and resistance. Results in our study indicates that Students have enough knowledge about antibiotic & antibiotic resistance. Similiar studies done in past demonstrated same results.[16-18]. In our study compare to knowledge, attitude was poor compared to knowledge. For example only 51% students answered yes about the question Do you take antibiotics only when prescribed by the doctor?. Study done by Khajuria K *et al* demonstrated that 43 % students answered yes about this question [13]. Other studies in

past demonstrated same results [15-17]. For practice,59% students answered yes about question Missing one or two dose of antibiotics does not contribute to resistance. So 41 % students have given wrong answer.21% answered as patient request I prescribe antibiotic.

## Conclusion

In our study knowledge about antibiotic students is good. But more education needed to improve attitude & practice among medical students.

This will decrease malpractice among future doctors & also help in decrease antibiotic resistance.

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