



A Survey on the Knowledge, Attitude, and Practices about anti-biotic resistance among general practitioners of Northern India

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ABSTRACT

The aim of the present study is to conduct a survey on the Knowledge, Attitude, and Practices about antimicrobial resistance among general practitioners of Northern India. This study was a questionnaire based cross sectional survey which was undertaken among general practitioners of Northern India. The questionnaire was distributed to 200 general practitioners of Northern India. Their KAP regarding antibiotic use and resistance was assessed. All the participants (100%) in the survey were aware that indiscriminate antimicrobial use leads to the emergence of the growing problem of resistance. Out of study participants, 99% were aware that antibiotic resistance is an important and serious global public health issue. 90% of the participants believed that antibiotics should not be taken on developing a cold. 78.5% participants believed that skipping few doses can contribute to the development of resistance. 94% of the doctors suggested completing the full course of the treatment. Regarding question about checking the rationality of antibiotics before prescribing them, 79% said yes they do it always, 11% said sometimes and 10 % said seldom. Only 17 % said that they ask their patients to check the expiry date before using an antibiotic. Our survey revealed that most of general practitioners were aware of the antimicrobial resistance and its consequences. Their knowledge and attitude was quite satisfactory but they were lagging on the few aspects of practices regarding antibiotic resistance. Further interventions are necessary to improve this condition as well as for developing awareness among general population.

Keywords: Antibiotic, Knowledge, Practice, Attitude, Prescription, Resistance

INTRODUCTION

Antibiotic resistance is becoming a serious and global problem (1). The threat is progressive rapidly and intensifying with the time. In 2011, on World Health Day, WHO set the theme as 'Combat Antimicrobial Resistance: No Action Today, No Cure Tomorrow' (2). This shows the importance of the issue of antibiotic resistance. It is important to think about various approaches, to meet the challenges and to tackle the problem. It is necessary to undertake campaigns among the general population as well as among the health care personnel about antibiotic resistance and its consequences and regarding the methods which can control its development as well as spread (3). One of the important causes leading to antibiotic resistance is irrational practices of healthcare professionals and indiscriminate use of antibiotics

(4). Unnecessary and overprescribing is widely prevalent (5). It is basically driven by patient demand, uncertainty about diagnosis, and time pressure on clinicians. One of the best ways to control resistance is rational use of antibiotic (6). Various studies have shown the inability of the physicians in creating awareness and providing adequate education to the general population regarding antibiotic usage (7). This could be because of lack of adequate training during their undergraduate and postgraduate studies.

Hence, this topic should form a vital part of both the undergraduate and postgraduate medical curriculum and adequate training should be provided to the medical students regarding the proper prescribing, dispensing and the usage of antibiotics. The general practitioners belong to a highly educated group of medical professionals and

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their knowledge, attitude and behavior in relation to public usage of antibiotics can greatly impact in the future on antibiotic-related issues.

So, this study was undertaken among general practitioners of Northern India, in order to assess their knowledge and attitude concerning antibiotic resistance and self-reported practices which are related to antibiotic usage.

MATERIAL AND METHODS

This study was a questionnaire based cross sectional survey which was undertaken among general practitioners of Northern India. The questionnaire was validated by subject experts for its content and relevance prior to the start of the study. The questionnaire was distributed to 200 general practitioners of Northern India. They were asked to complete the questionnaire anonymously. Informed consent was taken from the participants.

QUESTIONNAIRE

Demographic data:

AGE-..... SEX-..... DESIGNATION-.....

ADDRESS-.....

Knowledge Questions (True/False/Uncertain)

Reply with True or false or uncertain:

K1. Indiscriminate antimicrobial use leads to the emergence of the growing problem of resistance-.....

K2. Antimicrobial resistance means that if they are taken too often, antimicrobials are less likely to work in the future-.....

K3. Bacteria cause common cold and influenza-.....

K4. Antibiotic Resistance is an important and serious global public health issue-

K5. Ineffective treatment can occur due to indiscriminate and injudicious antimicrobial use

Attitude Questions (Rated Response: Strongly agree, somewhat agree, undecided, somewhat disagree, strongly disagree)

A1. When patients have a cold, I should prescribe antibiotics to prevent getting a more serious illness.

A2. When patients get fever, antibiotics help them to get better more quickly.

A3. Whenever I prescribe an antibiotic, I contribute to the development of antibiotic resistance.

A4. Skipping one or two doses does not contribute to the development of antibiotic resistance.

A5. Antibiotics are safe drugs, hence they can be commonly used.

Medication Practice Questions (Rated Response: always, usually, sometimes, seldom, never)

P1. The Doctor prescribes a course of antibiotic for a patient. After taking 2–3 doses he starts feeling better.

a) He should stop taking the further treatment?

b) He should save the remaining antibiotics for the next time you get sick?

c) He should discard the remaining, leftover medication?

d) He should give the leftover antibiotics to your friend/roommate if they get sick?

e) He should complete the full course of treatment?

P2. Do you check the rationality before starting an antibiotic?

P3. Do you ask patients to check the expiry date of the antibiotic before using it?

P4. Do you prefer to prescribe antibiotic when patients have cough and sore throat?

What is the cause of antibiotic resistance

.....

What according to you is the solution for the growing problem of Antimicrobial Resistance?.....

RESULTS

All the participants responded to the questionnaire. So the response was 100%. To simplify the analysis, we reduced the five point response options of the Likert scale into three, such as agree/uncertain/disagree, important/neutral/unimportant, and usually/ sometimes/seldom [Table-1]. All the participants (100%) in the survey were aware that indiscriminate antimicrobial use leads to the emergence of the growing problem of resistance. Out of study participants, 99% were aware that antibiotic resistance is an important and serious global public health issue. 192 participants (96 %) believed that if antimicrobials are taken too often, they are less likely to work in the future [Table-2]. Ninety percent of the participants believed that antibiotics should not be taken on developing a cold and 6.5% of them believed that giving antibiotics on having a cold made patients feel better more quickly. 74% of the participants were disagreeing to the fact that prescription of antibiotics can contribute to the development of resistance while 19 % were agreeing to it. 78.5% participants believed that skipping few doses can

contribute to the development of resistance while 6.5 % were uncertain about it [Table-3].

89% of the practitioners believed that the patients should not stop taking the further treatment if they start feeling better with 2-3 dose. 94% of the doctors suggested completing the full course of the treatment. While asking about what a patient should do with the remaining leftover drug, only 38% believed that they should discard it always, 28% said no to it. Regarding question about checking the rationality of antibiotics before prescribing them, 79% said yes they do it always, 11% said sometimes and 10 % said seldom. Out of all participants only 17 % said that they ask their patients to check the expiry date before using an antibiotic, 28.5 % said they do it sometimes and 54.5 % said they did so never. Only 3.5 % believed that they should always prescribe an antibiotic for cough and sore throat while 78% said seldom or never [Table-4]. Asking about any solution for the growing problem of antibiotic resistance, 56.5% believed that rationale use of the drugs can solve the problem. 16.5 % suggested creating awareness among general population. 14 % supported the completion of full course of antibiotics.

Table-1: Knowledge Questions regarding antibiotic resistance.

Q. No.	Question	True n (%)	False n(%)	Uncertain n(%)
1	Indiscriminate antibiotic use leads to the emergence of the growing problem of resistance	200(100%)	0	-
2	Antibiotic resistance means that if they are taken too often, antimicrobials are less likely to work in the future	192(96.0%)	8(4.0%)	-
3	Bacteria cause common cold and influenza	1(0.5%)	199(99.5%)	-
4	Antibiotic Resistance is an important and serious global public health issue	198(99.0%)	2(1.0%)	-
5	Ineffective treatment can occur due to indiscriminate and injudicious antimicrobial use	198(99.0%)	2(1.0%)	-

Table-2: Attitude questions regarding antibiotic resistance

Q. No.	Question	Agree n (%)	Disagree n (%)	Uncertain n (%)
A1	When patients have a cold, I should prescribe antibiotics to prevent getting a more serious illness	13 (6.5%)	180(90%)	7 (3.5%)
A2	When patients get fever, antibiotics help them to get better more quickly	22 (11.0%)	168 (84.0%)	10 (5.0%)
A3	Whenever I prescribe an antibiotic, I contribute to the development of antibiotic resistance	38 (19.0%)	148(74.0%)	14 (7.0%)
A4	Skipping one or two doses does not contribute to the development of antibiotic resistance	30 (15.0%)	157 (78.5%)	13(6.5%)
A5	Antibiotics are safe drugs; hence they can be commonly used	28 (14.0%)	169 (84.5%)	3(1.5%)

Table-3: Practices questions about antibiotic resistance

Q. No	Question	Always or Usually	Sometimes	Seldom or Never
P1	The Doctor prescribes a course of antibiotic for a patient. After taking 2–3 doses he starts feeling better.			
a)	He should stop taking the further treatment?	3(1.5%)	19(9.5%)	178(89%)
b)	He should save the remaining antibiotics for the next time you get sick?	15(7.5%)	23(11.5%)	162(81.0%)
c)	He should discard the remaining, leftover medication?	76(38.0%)	68(34.0%)	56(28.0%)
d)	He should give the leftover antibiotics to your friend/roommate if they get sick?	21(10.5%)	44(22.0%)	135(67.5%)
e)	He should complete the full course of treatment?	188(94.0%)	11(5.5%)	1(0.5%)
P2.	Do you check the rationality before starting an antibiotic?	158(79.0%)	22(11.0%)	20(10.0%)
P3.	Do you ask patients to check the expiry date of the antibiotic before using it?	34(17.0%)	57(28.5%)	109(54.5%)
P4.	Do you prefer to prescribe antibiotic when patients have cough and sore throat?	7(3.5%)	37(18.5%)	156(78.0%)

Table-4: Suggestions for growing problem of Antibiotic resistance

Any suggestion or solution for growing problem of Antimicrobial Resistance	
Rationale use of the antibiotics	113(56.5%)
Creating awareness among patients by organizing health campaigns	33(16.5%)
Promoting complete course of antimicrobials in the prescribed dose	28(14.0%)
Multidrug therapy	12(6.0%)
Avoid self medication	9(4.5%)
New drug discovery	3(1.5%)
No response	2(1.0%)

DISCUSSION

The development of resistant among bacteria against antibiotics is a global concern. Our study provides useful information about the knowledge, attitudes, and the practices of the medical practitioners in Northern India with respect to antibiotic resistance and usage. A majority of the participants were well aware of the global as well as the nationwide problem of antimicrobial resistance. Many previous studies have shown the similar results (8).

The attitude of the study participants with regards to antibiotic use and resistance was found to be satisfactory except on few points. 15% believed that the skipping few doses do not contribute to the development of resistance. 84.5% were agreeing to the fact that antibiotics should not be used commonly when not required. Various previous studies have shown similar results earlier (9, 10).

Regarding practices, 94% participants insisted on completion of full course of drugs. There were mixed response about what a patient should do with the leftover drug. 79% of the practitioners considered about the rationality before prescription

while 10% seldom consider it. Only 34% of the practitioners suggest their patient to check for the expiry date before the use of drugs. Only 78% considered it unnecessary to use antibiotic for cough and sore throat. 56.5% of the participants believed that rationale use of the drugs can solve the problem. 16.5% suggested creating awareness among general population.

In our study we found that the knowledge and attitude of the general practitioners of Northern India regarding antibiotic resistance is satisfactory. But when it comes to practices, it's lagging on few important aspects. As antibiotic resistance is a global problem with numerous causes associated with it, we need to take proper and immediate steps to control the problem. Health professionals are key to any country's health status, hence it's important to take necessary steps for developing proper knowledge, attitude and practices among them regarding antibiotic resistance. Not only the health professionals, it is of utmost importance to develop awareness among general population regarding the issue.

The topic should be dealt in depth during the under-graduation and post-graduation studies of medical students. Integrated teaching should be

included in the curriculum like teaching rationale prescribing methods in pharmacology to infection control in microbiology.

In present days media and the internet have become important sources of information, especially among the young population; hence they must be included in generating awareness about this issue.

CONCLUSION

Our survey revealed that most of general practitioners were aware of the antimicrobial resistance and its consequences. Their knowledge and attitude was quite satisfactory but they were lagging on the few aspects of practices regarding antibiotic resistance. Further interventions are necessary to improve this condition as well as for developing awareness among general population.

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