

Over use of Drugs and Antibiotics for Common Cold: Survey Study on Young Population

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Abstract

Unnecessary rampant usage of antibiotics by people is becoming an alarming issue in India and surrounding Asian countries. Antibiotics are easily available to common population in India. Many people because of lack of awareness about usage of antibiotics, use antibiotics without any proper prescription and even if prescribed for a particular bacterial infection do not complete the prescribed course of antibacterial drug and this is creating a big issue in the medical health sector, as microbes are becoming drug resistant and stop responding to the existing drugs.

Common cold is a harmless viral disease of nose and upper respiratory tract and it cures on its own within a week. But to speeding up the recovery, many people who are quite unaware of usage of medicines, start antibiotics even without the prescription of authorized health care official. Situation is alarming in rural areas specially. Drug resistance is creating a huge hindrance in the proper treatment of major diseases. Awareness of usage of antimicrobial medicinal drugs among young population specially from rural areas is very important to deal with the issue of antibiotic resistance.

Aim: Aim of the present study was to check the awareness of drug/ antibiotics usage in random youngsters. They were asked to answer a questionnaire regarding the use of drugs and antibiotics for the treatment of common cold.

Results: Total 100 students were enrolled for the study. A written consent was taken from all the participants. Students in the age group of 18-30 years were included in the study. It was observed that only 22 % of the students were actually aware of antibiotics usage. 20% of the students enrolled had no awareness about antibiotic usage. 56 % of the enrolled students were not sure about their awareness on the antibiotic usage. 2% of the enrolled students did not disclose their information.

Conclusion: So it was concluded that there is a huge need of public awareness about antibiotic usage. It was observed that every student prefer different field of medicine when they catch common cold, homeopathy 7 %, Allopathic 26%, Natural Healing 36 %, Home Remedy 25% and Ayurveda 6%. 40% students confirmed treatment for common cold using different remedies speeding up their recovery. Natural healing was also adopted by most the students followed by Allopathic, Home remedy, Homeopathy, Ayurveda.

Key words : Overuse; Drugs; Antibiotics; Common cold.

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Introduction

Survey studies on the population of different areas are very important to find the status of any parameter¹. If the consumption of antibiotics is over-the-counter, i.e antibiotics are taken without the prescription of a physician, it may prove risky³. Overuse of antibiotics can lead to antibiotic resistance⁴. This occurs when bacteria changes in a way that reduces the effectiveness of drugs or medicines over the bacteria and thereby hindering the process of treatment or prevention of infections. In this case, the bacteria survive over antibiotics and continue to grow, causing more harm. Infections

caused by antibiotics resistance can lead to longer hospital stays, higher medical costs and more deaths⁵. In viruses, nearly more than 200 types are severely harmful, but the most common one is the Rhinovirus, which is thought to be responsible for at least 50% of the cases⁶. Other viruses that can cause colds include coronavirus, respiratory syncytial virus, influenza and Para influenza, etc.².

The management of the common cold and most viral infections can be easily taken care of with the increased liquid diet intakes⁷. It is important to note that the antibiotics cannot treat viral infections like cold, flu and most coughs, since antibiotics work only over bacteria. While antibiotics offer quick relief from bacterial infections like fever and pneumonia, overuse or use without any prescriptions can elevate the risk of antibiotic resistance and many ill-effects⁸.

Thus in our present study we surveyed to find whether the young population is aware about the management of the common cold or just the dependence of treatment lie solely upon the drugs or antibiotics for the management of the common cold. According to WHO, the over use of antibiotic and drugs causes the more challenges in treating the patients. It is therefore very urgent and necessary to stop the overuse or misuse of the drugs and antibiotics and choose over the limited use of the antibiotics.

In previous study more than 1500 adults were enrolled and were also encouraged to participate in the survey study based on the adult population. On the basis of the review of literature there are many reasons behind the antibiotics and drugs but we are listing some of the reasons that are found in most of the studies.

Review of Literature

The antibiotics and drugs are becoming resistant towards the pathogens and microbes⁹, due to the overuse and unauthorised consumption by communities. We all are directly or indirectly responsible for the overburden of drugs resistance against the infections¹⁰. As we all are aware that the common cold is a natural process but most of the youngsters don't have sufficient knowledge about health¹¹. The common cold is a viral infection of the upper respiratory tract¹². Common cold causes discomfort in breathing, feeling of laziness and fever and inability to do the routine work properly¹³. In the previous survey studies done on adult population of 1141 Jordanians, the authors found that 67.1% adults believed that antibiotics treat

common cold and cough. Most shocking fact found was that 28.1% abused antibiotics as analgesics for their daily eating habits and use these for the purposes of drug addictions. 11.9% of females were found having insufficient information and knowledge.

The misuse of the drugs as well as the antibiotics was found to be a major challenge. Most of the females were not aware of antibiotics use during pregnancy and nursing. 28.5% kept antibiotics at home for emergency use and 55.6% use them as prophylaxis against infections. 49.0% use left-over antibiotics without physician consultation while 51.8% use antibiotics based on a relative advice. 22.9% of physicians prescribe antibiotics over the phone. The most important is more than 50.0% routinely suggest antibiotics to treat common cold symptoms¹¹.

In other study it was noted that self-medication with antibiotics has become an important factor driving antibiotic resistance¹⁴. This study investigated the period prevalence, patterns of use, and socio-demographic factors associated with self-medication with antibiotics in Yogyakarta City Indonesia¹⁵. This cross-sectional population-based survey used a pre-tested questionnaire which was self-administered to randomly selected respondents (over 18 years old) in Yogyakarta City Indonesia in 2010 (N = 625). Descriptive statistics, chi-square and logistic regression were applied. A total of 559 questionnaires were analyzed (response rate = 90%). The period prevalence of self-medication with antibiotics during the month prior to the study was 7.3%. Amoxicillin was the most popular (77%) antibiotic for self-medication besides ampicillin, fradiomisin-gramisidin, tetracycline, and ciprofloxacin to treat the symptoms including the common-cold, cough and sore throat, headache, and other minor symptoms, with the length of use mostly less than five days¹⁶. Doctors or pharmacists were the most common source of information about antibiotics for self-medication (52%). It was also seen in most of the cases that antibiotics were usually purchased without prescription of doctor (64%) and the cost of the purchases was commonly less than US \$1 (30%)¹⁷. In a previous study it was reported that the non-prescribed antibiotics population was 54%. Study suggested that the overall impact of health sector and the insurance coverage on self-medication should be banned so that the antibiotic resistance could be controlled¹⁵. Despite great advances in medicine, the common cold continues to be a great burden on society in terms of human

suffering and economic losses.¹⁸. Studies report the cause of common cold by the common influenza virus which makes the respiratory track stuffy and thus supports the virus growth, mostly in the cold seasons. It is an illness caused by a group of viruses, located in the nose and upper respiratory track¹⁹. It involves the sinuses, ears, and bronchial tubes. The symptoms of a common cold include sneezing, runny nose, nasal obstruction, sore or scratchy throat, cough, hoarseness, and mild general symptoms like headache, feverishness, chilliness, and not feeling well in general²⁰. On the basis of the review searched we have noticed the some of the factors responsible for the overuse of antibiotics and drugs over the counter. The main factors noticed are mentioned in the (Fig1).



Fig. 1 Showing the factors responsible for the drug and antibiotics resistance. Less knowledge of all kinds of treatments, self-medication, over prescription or force prescription, Lack of awareness, Drug abuse etc.

less time nobody wants to give the time to body for respond. So this survey study was very important and the demand of the current situation. So the study was divided into some groups and the groups were separated in the bases each individual was asked to fill the survey form and that was explained to the candidate into the local language also. Over use of drugs and antibiotics during the common cold we found tremendous result. We all know that what is good? Or bad but still we are not implementing those things in life so implementation is must. But we are lacking in the implementation part. The problem is we don't share with young generations. Either we don't have time to discuss these things or the reason may be smart phones or lack of time. Are we going in a right direction or a new era of problems or drug resistance is waiting for us.

Material and Methods

Total 100 students of Chandigarh University were enrolled in the study and this study was conducted after getting written consent from the all participants. Only the students of age group 18-30 were included. Participants were asked to fill the questionnaire. We observed that from the total number of enrolled students, only 22 % were aware of antibiotic resistance and usage of medicine and common home remedies for common cold.

Result

56 % of the students were not sure of whether they have proper knowledge of the all available sources and the treatment options for the common cold. So it is concluded that awareness lectures should be carried out more often. It was observed from the answers of students that 2% of the enrolled students didn't disclose their information (Table1). It was also assessed that the types of treatments opted by the students. We found that out of 100 enrolled students in the study only 7% of students use homeopathy followed by 26% use Allopathic, 36% use Natural Healing, 25% use home Remedy and 6% use Ayurveda in case they catch common cold (Table2)

Antibiotic Use in India
(Source : IMS Health)

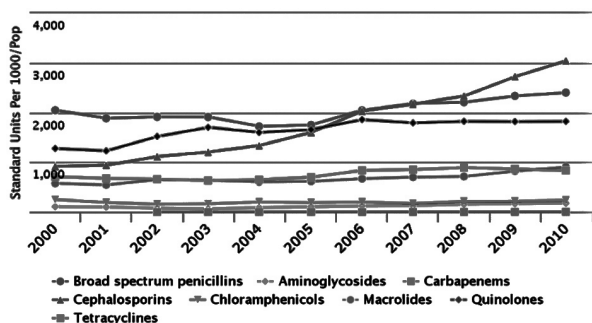


Fig. 2 Antibiotic consumptions in India is increased during the time due to no control over the counter sale and availability without the prescriptions of medical consultant.

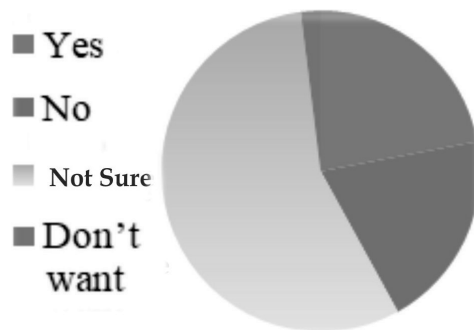
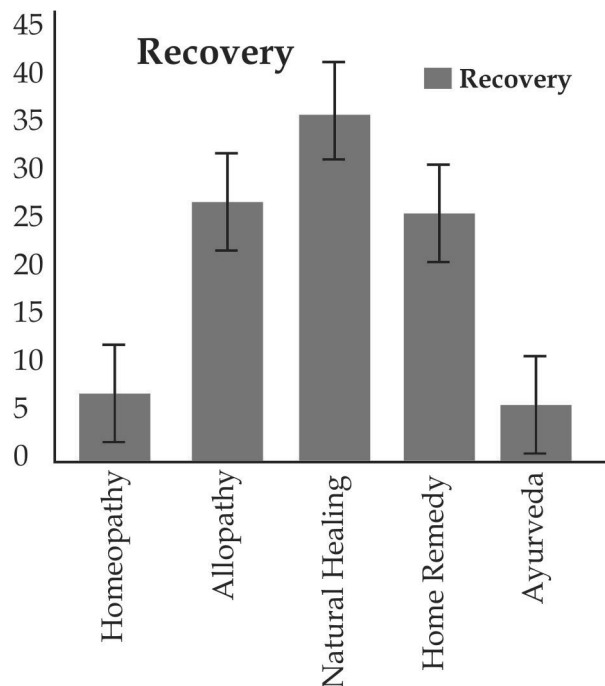
Form last decades the over use of the drugs and antibiotics was increased or on high priority for everyone because everybody wants to be well in

Table 1: Percentage of enrolled students who answered the questionnaire:

Total students participated in the study	100 students			
Out of 100 students wants to share information	Yes	No	Not Sure	Don't want
Level of Awareness	22	20	56	2

Table 2: Percentage of students opted for the different types of treatment and the recovery with the treatment.

Branch of treatment	Recovery
Homeopathy	7%
Allopathic	26%
Natural Healing	36%
Home Remedy	25%
Ayurveda	6%
	100%

Graph 1: Showing the Students responded to the survey study**Graph 2:** Bar Graph showing the Recovery rate of the students opted for the different types of treatments during common cold.

Discussion

In the present survey we found that the over-use of antibiotics was majorly due to the lack of awareness about the various fields or ways of treatment. Most of the candidates were not able to name all ways of treatments available in the market. The recovery for the medication was also checked in the study.

Maximum recovery was 40% from the treatment as well as by the natural healings. It is doubtful that since the recovery rate by the use of Drugs and the Natural healing is same, still the use of Drugs and Antibiotics is dominating.

It is really important to conduct more of Health promoting studies and activities that spread awareness and knowledge about the use of drugs and antibiotics. It is known that the overuse of antibiotics can lead to antibiotic resistance. The natural homemade syrup to fight the common cold is more beneficial as compared to the use of antibiotics and drugs. It is harmless and at the same time having high medicinal values. This syrup is made of cinnamon, ginger, licoric root, and marshmallow root. This in combination with their medicinal properties works best to clear congestions and phlegm. The recipe for homemade syrup requires 1 tablespoon of chopped ginger root, 1.5 tablespoon of grounded cinnamon, 1 tablespoon of marshmallow root, 1.5 tablespoon of liquorice root, 5 cups of water, 1 cup of natural honey. Boil all ingredients in water until water is reduced to half and drink the solution after cooling. This is the best and home based remedy for the common cold that have no side effects. So to avoid the over use of drugs and the antibiotics we have to look these kinds of alternative remedies for the common cold and other common viral infections. So we have to come up with traditional herbal remedies for the better effects and safety. Most antibiotics cause the side effects and the overuse of antibiotics leads to antibiotic resistance. According to World Health Organization (WHO), overusing and misusing antibiotics puts us all at health risk. Overuse of antibiotics can lead to antibiotic resistance. This occurs when bacteria changes in the same way that reduces effectiveness of drugs or medicines designed to treat or prevent infections. Infections caused by antibiotic resistance can lead to longer hospital stays, higher medical costs and more deaths. When bacteria becomes resistance to antibiotics, common infections like fever and cold will no longer be treatable, according to WHO.

The main truth about the antibiotics resistance

- Person of all ages are prone to infections, and antibiotic resistance can hinder the process of antibiotic effectiveness over bacterial infections. Over use of antibiotics make bacteria resistant to antibiotics, and thus the antibiotics show no effect over bacteria.
- Consuming antibiotics without proper medical consultation and prescription

increases the emergence of antibiotic resistance. This, according to WHO, is one of the biggest threats to global health.

- Antibiotics resistance obstruct the treatment by making the antibiotics ineffective over the bacteria. Most antibiotic treatment procedures thus becomes useless for the subject suffering from infection. All listed reasons are enough to convince anyone that the unnecessary consumption of antibiotics is harmful. Taking antibiotic in cases that can be handled otherwise, offers a temporary relief, but is proven to be harmful for future treatment procedures.
- Most nutritionist suggests the following treatment for the management of common cold:
 - Taking sufficient rest,
 - Drinking sufficient water, and
 - Having curd rice
- *Rest*: As rest offers time to body for healing and thereby assists in restoring immunity, it is beneficial to take sufficient rest in sickness for a quick recovery process.
- *Water*: The fluid intake of the sick must be optimum enough, and thus its beneficial to have sufficient hot or lukewarm water throughout the day. Warm Water offers relief to the throat and curbs the cough. It also clears the mucous lining and thins down phlegm, making it easier to spurt phlegm out. Keeping the body well-hydrated also enables a quick and efficient recovery.
- *Curd rice*: It is a probiotic-rich dish which can restore gut flora. It is helpful in bringing a feeling of restfulness and improves the digestion and aids in fast recovery.
- In a period of week time, these can offer the same effects as antibiotics. Antibiotics on other hand offers immediate relief but gives aforementioned side effects and the fear of antibiotic resistance. Rest, water and curd rice offer relief without any side effects and antibiotic resistance.

Conclusion

We concluded that the awareness programme must be delivered at schools and colleges or should be incorporated in the necessary curriculum of every school and graduation courses of every

branch at colleges. To develop awareness about antibiotic resistance among common population is very important because lack of awareness will lead to a big hurdle in the eradication of issue of drug resistance. If random usage of antibiotics will not be solved at the moment, microbes will become resistant even to the newer drugs and it will be difficult to treat patients of major illness dealing with multi drug resistant.

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Future instruction for safe use of Antibiotic the Awareness Programme: Antibiotics or anti-bacterial are medicines that either kill or impede the growth of bacteria present inside the host body. Antibiotics include a variety of strong drugs used for treating bacterial infections, whereas these antibiotics cannot act towards viral infections like cold, flu and most coughs. While antibiotics offer a quick relief from bacterial infections like fever and pneumonia, the overuse can put the subject to a risk of antibiotic resistance.

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