

COMMENT

Consequences of irrational use of antibiotics

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India is a vast country of immense diversity. This diversity is seen at its most extreme in people's access to health care. The poor and marginalised sections of society, the people in remote rural regions of the country and those at risk of disease due to an unhealthy environment and inadequate nutrition, are the most affected. One of the many ways in which this inequality shows up is in the treatment of various illnesses, especially infections. Not only can the poor not afford antibiotics, they are also most affected by the rapid rise of antibiotic resistance (1).

A high level of antibiotic resistance has major consequences for society, and especially for those on the margins who have the least access to health care. Delaying treatment with the right antibiotic increases the chance of severity and complications and forces the use of more potent and costlier antibiotics. Simple infections may need to be treated with antibiotics that need hospitalisation and that increases the pressure on the overburdened hospital system (2,3). Most importantly, however, more and more people may die since microbes may have developed the means to destroy the very antibiotics that were meant to kill them.

It is therefore important to look at what could be promoting the rise of antibiotic resistance. One of the possible causes of this phenomenon is the inappropriate use of antibiotics. Community studies have indicated that for illnesses such as diarrhoea and fever, which are predominantly viral in aetiology, approximately 70 percent of patients going to health facilities are given antibiotics (4). This is an inappropriate use of antibiotics (since antibiotics have little effect on viruses) and has resulted in increased resistance. This raises many ethical issues as we will see when we take a closer look at some of the factors and players that have an impact on irrational antibiotic use.

The role of the public

It is ironic that in this age of information, many people in this country are unable to educate themselves about health matters. They are ill-informed about illnesses, about the fact that a common cold, for example, is caused by a virus and thus does not need to be treated with antibiotics. Children are frequently down with acute respiratory infections and many parents immediately think that their suffering child needs an antibiotic because they do not know that a majority of coughs and colds are viral in origin. Their ignorance is not just about the cause of the disease; it is also about the medicines that they consume. They may have heard of the term "antibiotic," but

often do not know that it is prescribed for an illness caused by bacteria; and they also do not know that it is meant to be taken for a fixed period of time. A patient I was once treating told me when I asked him what medicines he was taking, that he was on erythromycin, an antibiotic, for eight years. I explained to him that erythromycin is usually only taken for up to a week. He replied that he had no idea that it was an antibiotic, and that the doctor who prescribed it had not told him to stop using it. One may argue that only health professionals need to be educated about disease and medicines, but for health to be in truly preventive mode, a basic knowledge of diseases and drugs among patients would go a long way in ensuring appropriate treatment such as appropriate antibiotic use.

The responsibility of doctors

Doctors are often considered to be God and therefore when a doctor gives an antibiotic to a patient, it is taken without question. However, a doctor is often pressurised to give antibiotics for a variety of reasons. It could be due to the pressure of making a patient well as soon as possible, or the fear of losing patients to another doctor. Patients often demand powerful treatments, and then there is the industry pressure and incentive schemes, and, most importantly, the doctor's own clinical judgement skills. To be fair, many doctors work with inadequate and unreliable investigational facilities. This may promote the use of combination antibiotics and defensive medicine.

Pharmacists' and chemists' shops

Chemists' shops, more popularly known as "medical shops," are a dime a dozen in many towns and cities. Many of them are situated near doctors' clinics, but often, patients go directly to a chemist, narrate their symptoms and ask for medication. The pharmacist gives his "diagnosis," and most often prescribes antibiotics -- without a doctor's prescription, of course. The problem is further compounded by the fact that many shops are manned not by qualified pharmacists, but by people who may not have even passed secondary school. Business rather than science is their occupation and whatever a patient asks for is given.

The pharmaceutical industry

Industry and medical representatives "push" irrational antibiotic use more than any other player. After all, money makes

the world go round. It is common knowledge that health professionals get incentives for prescribing and dispensing particular brands of medicines. This is particularly true in the case of antibiotics, which are sold most widely in a country like India that has multiple infectious diseases. The situation gets worse when more expensive and reserve antibiotics are promoted by medical representatives who pull out words and sentences from medical literature to convince the already beleaguered doctor that his patient deserves "the best".

Games can also be played in other ways especially when companies want to avoid the patent trap. Molecules from the same class are promoted with the bait that they are better, less costly, and easily administered. Unfortunately this widespread use leads to cross-resistance with the older antibiotic which is often used as a reserve antibiotic for serious and life saving illnesses. The introduction of feropenem as against the older meropenem is a case in point.

The other side of the story is that the pharmaceutical industry is concentrating its research and development on drugs to treat chronic illnesses rather than on antibiotics because of the latter's fixed duration use and resistance issues. Targeting chronic illnesses is a strategic move for better profitability, but neglecting research and development of antibiotics will have disastrous consequences as more and more of the older antibiotics die without newer ones coming into the market.

The government

There are hardly any government regulations on antibiotic use in India. Policies meant for implementation in hospitals are not strictly implemented. Neither are there sufficient penalties for irrationally prescribing an antibiotic. The Drug Controller's office is understaffed and overworked with clinical trial approvals, quality assessments and documentation. Manpower for regulating misuse and overuse of drugs is thus minimal. Willpower, too, is negligible; it would be interesting to know how knowledgeable policy makers are about the consequences of inappropriate antibiotic use.

Other players

There are other players who may be contributing to a

significant amount of inappropriate antibiotic use. Farmers overuse antibiotics for both animal and agricultural purposes. Though there are specific antibiotics for these uses, in practice, many antibiotics used for humans are used in animal husbandry and agriculture. This leads to cross-resistance for humans and consequently high resistance.

Complementary medicine specialists and quacks also use allopathic drugs, including antibiotics, although they have no expertise in their prescription. Though the law clearly states that properly trained professionals should use only the systems of medicine they are trained in, the reality is very different.

Antibiotic disposal is another issue which merits attention. What happens to antibiotics which expire or antibiotics that are not used? Are there policies in place for disposal of antibiotics and drugs? It's my guess that many of these antibiotics find their way into our wells and water systems, leading to further exposure and further resistance.

It is interesting to note the number of ethical issues tied in to inappropriate antibiotic use and rising antibiotic resistance. Unethical antibiotic use is, I feel, a much bigger issue than AIDS and terrorism put together. The consequences can affect all of us and, in fact, we are already feeling its effects. We are hurtling fast into the pre-antibiotic era. To prevent this potentially disastrous situation, can we, as a society, ethically use antibiotics, thereby saving ourselves from total annihilation by bacteria and other microbes? Can we rise to the challenge and save the antibiotics that save us?

References

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