



ANTIBIOTIC RESISTANCE: A GLOBAL PHENOMENON

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ABSTRACT Antibiotic resistance has risen to dangerously high levels worldwide leading to inability in treating infections. This has led to increased burden on health care professionals globally. The emergence of antibiotic resistance has been due to the inadvertent and injudicious use of the drugs, more so in countries where they are available without valid prescriptions. Antibiotic resistance needs to be tackled using multilevel strategies to prevent it from wreaking havoc on already overburdened health care systems across the world.

KEYWORDS : Antibiotic Resistance, Health Care, Injudicious use, WHO

INTRODUCTION

Antibiotic resistance refers to unresponsiveness of a bacteria to an antibiotic. It could be natural resistance which does not pose a significant clinical problem. The cause of concern is acquired resistance which occurs due to use of an antibiotic over a period of time. This is a major clinical problem and can happen with any microbe.

The emergence of antibiotic resistance in a wide variety of important pathogens of humans presents a worldwide threat to public health¹. Non-judicious use of antibiotics is mostly responsible for making the microbes resistant. The antibiotic treatment repertoire for existing or emerging hard-to-treat multidrug-resistant bacterial infections is limited, resulting in high morbidity and mortality report². Antibiotic resistance has led to escalated medical costs, disproportionate increase in mortality and morbidity.

This phenomenon requires us to change our outlook towards antibiotic prescribing ways which translate into changing our practicing attitudes and implementing rational usage of antibiotic at all levels.

Magnitude of the problem

There has been an explosion in the scenario of antibiotic resistance. Microbes are fast acquiring newer mechanisms of resistance leading to increase in infections which are becoming difficult to treat. The common infections once controlled easily are becoming nightmare for the treating health care professional. This has been caused due to many factors. In many countries, antibiotics are unregulated and available over the counter without a prescription^{3,4}. This scenario is worse in countries where antibiotics are bought for consumption without a valid prescription. The lack of standard treatment guidelines has aggravated the problem further.

Remedial strategies

This phenomenon of inadvertent use of antibiotics has led to emergence of drug resistance which is an established an expanding menace now. It has become responsibility of every person associated with health care systems to take steps to alleviate the problem. Patients, health care professionals, veterinary professionals, drug policy makers need to collaborate to curb the hazard of antibiotic resistance.

Steps to be taken by

1. Individuals

Adopting ways to prevent acquiring infections; regular hand washing, avoidance of contact with sick people, practicing hygienic food preparation methods etc.

Only take antibiotics prescribed by a health care professional. Avoiding incomplete course of antibiotics.

2. Health care professionals

Avoid injudicious and indiscriminate use of drugs. Always institute rational usage of drugs.

Prevent spread of infections by regular hand washing, keeping instruments and treatment place clean.

Report antibiotic-resistance infections to the concerned authority immediately.

Educate patients about drug resistance and also tell them about ways to prevent acquiring infections.

3. Veterinary professionals

Antibiotics should always be used under veterinary supervision in animals.

Animals should be vaccinated routinely to prevent use of antibiotics. Prevention of use of antibiotics in animals to enhance growth. Adopting methods to improve animal hygiene.

Upcoming approaches

Health care industry needs to invest in research and development of newer antibiotics and diagnostic tools to prevent and control the spread of antibiotic resistance. Rapidly emerging resistant bacteria threaten the extraordinary health benefits that have been achieved with antibiotics⁵. Although there have been development of newer antibiotics, it is fast becoming difficult to find effective antibiotics for many infections. An all out approach is required to combat the growing menace of antibiotic resistance. Many agencies are working together to address this issue.

WHO has issued a Global Action Plan on antimicrobial resistance, including antibiotic resistance at World Health Assembly in May 2015. The aim of this plan is to ensure prevention and treatment of infectious diseases with safe and effective medicines. WHO is supporting Member States to develop national action plans on antimicrobial resistance, based on the Global Action Plan.

WHO has been leading multiple initiatives to address antimicrobial resistance⁶:

1. World Antibiotic Awareness Week
2. The Global Antimicrobial Resistance Surveillance System (GLASS)
3. Global Antibiotic Research and Development Partnership (GARDP)
4. Interagency Coordination Group on Antimicrobial Resistance (IACG)

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