



RAIDIGHI COLLEGE

(A NAAC Accredited College)

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Date: 11/11/2021

NOTICE

This is to inform all the concerned that the following event will take place in the premises of Raidighi College. You are requested to comply and oblige. The details of the event are given below:

Title: AntiMicrobial Awareness Week

Date: 18.11.2021 to 24.11.2021

Time: 11:00 AM

Venue: Department of Microbiology

Type of Event: Extensional & Outreach Activity




Dr. Sasabindu Jana
Principal
PRINCIPAL
RAIDIGHI COLLEGE



ANTIMICROBIAL RESISTANCE

INTRODUCTION

HISTORY

In the 1920s, British doctor, Sir Alexander Fleming himself coined the term of antibiotics.

It is not difficult to make microbes resistant to penicillin in the laboratory by exposing them to concentrations not sufficient to kill them and the same thing has occasionally happened in the field - and by exposing his microbes to non-lethal quantities of the drug, he made them resistant!

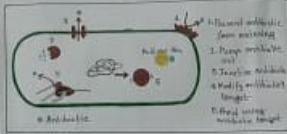
ANTIBIOTIC RESISTANCE

The ability of bacteria and other microorganisms to withstand and metabolize the antibiotics to which they were once sensitive.

Elements of microorganisms to inhibit action of antibiotics.

Resistance to antibiotics is a biological phenomenon that can be modulated by a variety of factors, including human practices.

MECHANISMS



- **Denial access:** membrane becomes impermeable for antibiotics e.g. Tolpans.
- **Targeting out:** the antibiotic factors from the cell e.g. tetracyclines.
- **Altered target site:** antibiotic cannot bind to its intended target because the target itself has been modified.
- **Enzymatic modification:** some bacteria have enzymes that cleave or modify antibiotics; e.g. beta-lactamase, aminoglycoside glycosylase.
- **Alternative target:** (glycylglycyl-tryptophan) e.g. *Staphylococcus aureus* penicillin binding protein (PBP2a) in MRSA.

CAUSES



OTHER CAUSES

- Inadequate waste management and poor water sanitation.
- Inefficient diagnostic tests for the rapid and reliable detection of resistance.
- Lack of vaccines for some important infections.

ANTIMICROBIAL RESISTANCE AND ENVIRONMENT



1. → Genes of resistance and resistant bacteria in the environment.
2. → Expression needed to humans.
3. → Public Administration resistance.

EFFECTS

1. Increased animal and human illness, suffering and death.
2. Increased human mortality.
3. Increased side effects from the use of multiple and more powerful medications.
4. Increased human healthcare costs.
5. Increased potential for coinfections and dissemination.
6. Reduced efficacy of selected antibiotic used in human.
7. Facilitated emergence of resistance in human pathogens.
8. Delayed or the infection after treatment.
9. Increased spread of antibiotic resistant bacteria and their associated morbidity and health care-associated infections.
10. Increased use of antibiotics.

AWARENESS

1. Only use antibiotics when prescribed by a certified health professional.
2. Never demand antibiotics if your health worker says you don't need them.
3. Always follow your health worker's advice when using antibiotics.
4. Never share or use leftover antibiotics.
5. Prevent infections by regularly washing hands, preparing food hygienically, avoiding close contact with sick people, practicing safe sex, and keeping vaccinations up to date.
6. Make information available on the impact of antibiotic resistance.
7. Report antibiotic-resistant infection to surveillance teams.
8. Tell to your patients about prescribing low-dose antibiotics correctly, antibiotic resistance and the dangers of misuse.

MCBA SEM-5

Panamburam Sankar

Abul Hasan Khan

Rohit Goyal

Bowen Goy

Microbiology students at Raidighi College actively participated in AntiMicrobial Awareness Week, held from November 18th to 24th, 2021

Throughout the week, four students engaged in activities aimed at raising awareness about the growing threat of antimicrobial resistance (AMR). A key aspect of this involvement involved creating informative posters effectively communicating the following:

- **The mechanism of AMR:** How microbes develop resistance to antimicrobial drugs.
- **The causes of AMR:** Factors contributing to the rise of resistant microbes.
- **The connection between AMR and the environment:** How environmental factors can influence the spread of AMR.
- **General awareness measures:** Steps individuals can take to combat AMR.

This initiative not only served as a valuable learning experience for the students but also helped raise public awareness about the critical issue of AMR.