Anti-Microbial Resistance in India

Why in news?

Recently the National Centre for Disease Control (NCDC) in a study found that over half of the nearly 10,000 hospital patients surveyed were given antibiotics to prevent, rather than treat, infection.

What is Antimicrobial Resistance (AMR)?

> *Antimicrobials - including antibiotics, antivirals, antifungals and antiparasitic - are medicines used to prevent and treat infections in humans, animals and plants.*

- It is defined as *resistance of micro-organisms* to an antimicrobial agent to which they were first sensitive.
- Microorganisms that develop antimicrobial resistance are sometimes referred to as "superbugs".
- **Indian context-** The present serious concern is that multiple types of bacteria like E. coli, Klebsiella, Acinetobacter, Staphylococcus aureus, enterococcus have even become resistant to some of the latest generation antibiotics.

- AMR causes higher mortality and morbidity due to drug resistant infections.

To know more about the silent pandemic of AMR click here

What are the key highlights of the report?

> *India carries one of the largest burdens of drug-resistant pathogens worldwide.*

Surveyed patients in %	Reason for antibiotic prescription
55%	Given prophylaxis as a preventive measure
45%	It is given to treat infections
6%	To identify the specific bacteria

What are the causes of AMR?

The World Health Organization (WHO) included AMR as one of the top 10 threats to public health in 2019.

- **Indiscriminate use**- The inappropriate use of antibiotics in non-bacterial infections both because of prescribing practices and the use of over-the-counter antibiotics.
- **Lack of research**- Inadequate laboratory facilities to inform clinicians rapidly about what would be an appropriate antibiotic even in bacterial infections, based on cultures.
- **Lack of capacity building-** Due to lack of adequate training in antibiotic selection, escalation and de-escalation.
- **Lack of regulation-** Inadequate monitoring of AMR and control of antibiotic and dispensing practices by health systems in spite of repeated warnings.
- **Market promotion-** The pharmaceutical industry is incentivizing the antibiotic prescribing practices of doctors.
- **Superbugs**- Inappropriate use of antibiotics and other molecules used to treat or prevent infections in the human, animal and agricultural sectors generate bugs that are resistant to these drugs.
- **Improper sanitation-** This leads to the spread of superbugs due to inadequate infection prevention in healthcare institutions.
- **Lack of support**- AMR is a complex socio-economic and political challenge and not just a scientific issue, it needs support from the pharmaceutical industry, awareness to the patients etc.,
- **Speedy treatment**- The course of antibiotics is cheaper than the investigation of patients, which is time consuming.
- **Infrastructural deficit**- India lacks laboratories to speed up the patient's investigation making it costly, which results in over prescription of antibiotics.

What is the way forward?

- **Promote research-** The need of the hour is linking labs to all levels of clinical setups and the fast transmission of infection-related data between the lab and the clinician.
- **Holistic approach-** The rate of AMR is directly proportional to steady and strong governance, infrastructure, sanitation, poverty, access to clean drinking water, etc.,
- **Patient safety measures-** The factors such as sanitation in hospitals, basic access to personal hygiene and infection control, are vital.
- **Enhance infection prevention**- The basic steps such as washing hands regularly, use of sanitizers helped a lot to keep the infection under control during COVID-19, such practices must be adopted to prevent AMR.

Steps taken to control AMR

Global initiatives

• **Global Action Plan on AMR-** It is committed to the development and implementation of multisectoral national action plans which was launched by the World Health Assembly in 2015.

• **World Antibiotic Awareness Week-** A global campaign that aims to raise awareness of AMR worldwide.

• **Global Anti-Microbial Resistance and Use Surveillance (GLASS) –** Launched by WHO in 2015 to strengthen AMR surveillance.

• **Muscat Ministerial Manifesto**- It has 3 goals - to protect the efficacy of antimicrobials and curb the development of AMR worldwide, reduce environmental pollution and lower the spread of AMR.

• **Access, Watch and Reserve (AWaRe)** – An initiative of WHO that takes into account the impact of different antibiotics.

India's initiatives

• **National Action Plan on AMR (NAP-AMR) for 2017-2021** addresses 6 critical issues.

• The country is in the process of updating its NAP-AMR for the period 2022-2026 through an extensive consultative process.

• **One health consortium**- Country's first one health consortium that enhance medical surveillance.

• **Delhi Declaration on AMR-** A multi-sectoral initiative to recognize the emergence and spread of AMR and to adopt a collaborative approach for preventing AMR.

• **Indian priority pathogen list-** Implemented to guide, research, discovery and development of new antibiotics.

- **Types of priority**- Critical, High, Medium.
- Example of critical priority- Colistin-R.

• **Red Line Campaign**- Aimed at discouraging unnecessary prescription and over the counter sale of antibiotics.

• **Chennai Declaration**- To formulate recommendations to tackle AMR.

References

1. The Hindu- Over prescription of antibiotics in India
2. WHO- Antimicrobial Resistance

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