

Irrational Antimicrobial Therapy: Case for a Frontal Attack

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Received: August 26, 2019; **Published:** September 11, 2019

To cite the World Health Organization (WHO), rational use of drugs requires that “patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and their community” [1]. Else, several “problems” may complicate the situation

According to Peterson and Robinson [2], almost two decades back (precisely in 2000), globally 40% of antimicrobial use was worked out to be “irrational”. A recent documentation shows a remarkable hike in the irrational antibiotic therapy (56%), the resource-limited countries evincing much higher malady than the prosperous countries [3].

The term, irrational drug therapy, denotes that drug use is not based on sensible and sound reasoning and standard principles. Irrationality in antimicrobial therapy may result from such factors as use of an unnecessary drug, wrong choice of drug, inappropriate dosage and route of administration and poor prescribing. Reasons for such irrationality include inappropriate model prescriber, undue pressures, Unfair practices, personal ambitions, life goals and myth.

Undoubtedly, over several decades antimicrobials have revolutionized the practice of medicine, rendering deadly and lethal infections readily treatable. Nevertheless, their rampant abuse is sought with a multitude of problems, especially the antimicrobial resistance (AMR). The AMR burden has assumed grown into a huge public health concern. AMR develops when microorganisms fail to be affected on exposure to antimicrobials. Microorganisms that develop AMR are sometimes referred to as “superbugs”. As a result, the antimicrobials become ineffective and infections persist in the body, thereby increasing the risk of spread to others. The emerging multidrug resistance (MDR) to bacteria, viruses, antifungal agents and antiparasitic drugs is the most dangerous development. We all are aware of the terrible issues associated with the MDR microorganisms in relation to tuberculosis (MDR-TB) and HIV (MDR-HIV). The terms extensively drug resistant (XDR) and pandrug-resistant (PDR) refer to special types of MDR pathogens. The seriousness of the problem of aAMR and MDR prompted the WHO to declare 7th April 2011 as the World Health Day with the theme “Antimicrobial Resistance: No Action Today, No Cure Tomorrow” [4,5].

Paradoxically, In spite of WHO and other allied agencies efforts, the problem of irrational antimicrobial use continues and what is most unfortunate, at a brisker pace, in the resource-limited countries in particular.

What is the concrete solution? The first and foremost is strict implementation of the standard recommendations such as:

- Use the appropriate antimicrobial for an infection; e.g. no antibiotics for viral infections
- Identify the causative organism whenever possible
- Select an antimicrobial which targets the specific organism, rather than relying on a broad-spectrum antimicrobial
- Complete an appropriate duration of antimicrobial treatment (not too short and not too long)
- Use the correct dose for eradication; subtherapeutic dosing is associated with resistance, as demonstrated in food animals.
- More thorough education of and by prescribers on their actions’ implications globally.

The currently-in-operation Antibiotic Stewardship Programme comprises a set of coordinated strategies aimed at improving the use of antimicrobial drugs with the goal of reducing the ever-rising AMR, cutting down unnecessary costs and enhancing health outcomes [6]. So far this program has remained confined to big hospitals. Hence the benefits, though being attained, are not as widespread as indeed required. There is a need to widen its scope.

Secondly, education of the prescribing doctors, nurses and unqualified practitioners emphasising and re-emphasising with effective monitoring rational antimicrobial use in the developing countries along with enforcement laws needs to receive meaningful attention.

Thirdly, we must safeguard use of antimicrobials in health situations where these are needed. There should be virtually no scope for an empirical therapy which accounts for a sizeable proportion of antimicrobial misuse.

Fourthly, direct sale of antimicrobial drugs by the chemists to the clients, a common practice in the Indian subcontinents, must stop forthwith.

Furthermore, our researchers must devote their energy in developing newer antimicrobials over time as the development of antimicrobial resistance cannot be prevented completely. To make up for the withering ones so that the invading infectious agents do not remain scot free to cause morbidity and mortality.

Over and above all that, new strategies like UV light treatments and bacteriophage utilization, must be tested for their effectiveness at the ground level.

We must act now - yes, in letter and spirit. Else, we should get ready for facing a situation when we are left with hardly any effective antimicrobial agent for serious infections.

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Volume 7 Issue 10 October 2019

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