

## Antibiotic Resistance: Recommendations for Procurement Agencies of Public Sector Hospitals in Pakistan

Sir,

Antibiotics resistance is a worldwide public health challenge that could retard any progress in minimising morbidity and mortality from infectious diseases. A blend of an inefficient public health system, high prevalence of nosocomial infection, high rates of infectious diseases, low-cost antibiotics and poor socioeconomic condition of patients are impending to augment prevalence of resistant infections in low and middle-income countries.<sup>1</sup> Unpublished data from a public sector hospital in Pakistan revealed an alarming resistance pattern of commonly used antibiotics (co-amoxiclav 77%, ceftriaxone 78%, cefipime 74%, cefotaxime 80%, cefoperazone 21%, ciprofloxacin 77%, tigecycline 22%, piperacilline 15%, meropenem 14%).

In Pakistan, the healthcare system comprises of a combination of publicly financed health delivery with privately financed market delivery.<sup>2</sup> Private sector healthcare providers may contribute to the progress of antibiotic resistance by inducing patients to obtain antibiotics from ill-regulated private sector pharmacies who have monetary incentives to sell antibiotics, present inappropriate courses of treatment, or make use of poor quality formulations.<sup>3</sup> However, on the other side, quality healthcare delivery in the public healthcare institutions remains suboptimal even though a significant percentage of country's health expenditure is going towards medicines procurement; there are usually no harmonised quality assurance systems for the procurement organisations involved. Major concerns included weak regulation related to drug registration in general and antibiotics in particular, poor market quality surveillance and provider prescribing practices, budget insufficiency for drugs quality testing, low deployment of pharmacists, and lack of community level actions.

A centralised procurement method is adopted in majority of the public sector hospitals of Pakistan, which is doing the rate contracting of drugs based on quality and price of the product on yearly basis. However, quality of the product is assumed from the quality of the manufacturing unit, which is still based on the paper documentation and market rapport of the supplier. It is pertinent to mention here that bioequivalence studies are not considered during

selection, which can give the biological and therapeutic equivalency profile of different brands of antibiotics. As a result, a low-price antibiotic is procured from a manufacturer, falsely claimed to have quality manufacturing unit based on various documentations produced at the time of evaluation. Furthermore, little attention is paid on service quality dimensions by public healthcare institutions having no emphasis on testing the quality and clinical efficacy of different brands of antibiotics. It is often difficult to prove causal relationships between poor quality antibiotics and immediate health. For clinicians, therapeutic failure is often the only indication of poor-quality medicines. However, clinical efficacy studies are lacking due to insufficient human resources in the public healthcare institutions, which is partly contributing to the communication gap between the regulating authorities and the actual end-users (the prescribers).

The result is lack of access to quality assured and clinically effective antibiotics which lead to subinhibitory concentration of antibiotics and thus fuel the development of resistance. It is thus need of the hour that extensive initiatives, legislative reforms, enforced actions, hospital information technology and communication strategies among different stakeholders should be taken at national level to improve patient outcomes. Some of the recommendations are as follows:

1. Antibiotic resistance should be declared as public health priority and should be reflected in national health policy.
2. Actions pertaining to the enforcement of legislation and prohibiting the manufacture and sale of substandard antibiotics.
3. The concept of priority medicines should be adopted to classify infectious diseases that are resistant to first line antibiotics.
4. National and provincial level antibiogram should be devised biannually.
5. Antibiotic stewardship department should be established in public sector hospitals having dedicated professionals and finances to run the department.
6. Clinicians and pharmacists should be technically equipped to conduct and report clinical efficacy studies related to antibiotics to the procurement agencies.

### CONFLICT OF INTEREST:

Authors declared no conflict of interest.

### AUTHORS' CONTRIBUTION:

JZK, ZH, MIT: Substantially contributed to the conception, drafting the working, final approval of the version to be published and agreement to be accountable.

## REFERENCES

1. Okeke IN, Klugman KP, Bhutta ZA, Duse AG, Jenkins P, O'Brien TF, *et al.* Antimicrobial resistance in developing countries. Part II: Strategies for containment. *Lancet Infect Dis* 2005; **5**:568-80.
2. Mahboob A, Altaf IUK. Misuse of antimicrobials. *Pak J Chest Med* 2018; **24**:131-2.
3. Khalid L, Mahsood N, Ali I. The public health problem of OTC antibiotics in developing nations. *Res Social Adm Pharm* 2016; **5**:801-2.

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