

Antibiotic Stewardship: Battle to Defeat Superbugs

The practice of medicine has been transformed by antimicrobials. However, overuse and misuse of antimicrobials is one of the major global health problems. Longer and expensive hospital stays are expected for those patients who are suffering from multi-drug resistant organisms.¹

Antibiotic stewardship is an emerging concept and may be defined as coordinated interventions to improve and measure the appropriate use of antimicrobials with selection of the optimal antimicrobial drug regimen, duration, dose, and route of administration.” Antibiotic stewardship program (ASP) is aimed to target the antibiotic related optimal clinical outcomes, minimal toxicity and adverse events, cost reduction for infections, and curtail the selection for antimicrobial resistant strains. Centre for disease control and prevention (CDC) has described core elements of hospital ASP, the essentials of these are leadership commitment, accountability, drug expertise, action, tracking, reporting, and education.² This program has larger impact on infection rates, resistance patterns, costs and clinical outcomes in many studies.^{3,4}

Pakistan, being the developing country, is facing the problem of antimicrobial resistance at large due to irrational use of antimicrobials. Review of data on drug use in Pakistan shows the excessive and irrational drug use in Pakistan with higher use of antimicrobials and injections and choice of more expensive drugs with inadequate dispensing, compared to the lower middle income countries. The injudicious use of anti-microbials attribute towards antimicrobial resistance and emergence of new mutant strain.⁵⁻⁸

In Pakistan, there is need to conduct drug utilization to identify appropriate usage of drugs in terms of medical, social and economic aspects. To overcome the problem, strategies to decrease unnecessary anti-biotic prescription like “Antibiotic Stewardship Programs” must be implemented.⁹ In Pakistan, Medical microbiology and Infectious diseases society of Pakistan (MMIDSP) has taken initiative to develop indige-

nous ASP and training program. The ASP should be the part of undergraduate curriculum to sensitize our future doctors. The regulatory authorities should also be active in monitoring the judicious use of antimicrobials. The masses should have easy access to the quality health care services, so as to minimize the irrational antimicrobial use.

References

1. Sebsibie G, Gultie T. Retrospective assessment of irrational use of antibiotics to children attending in Mekelle general hospital. *Sci J Clin Med.* 2014; 3 (3): 46-51.
2. Centre for Disease Control and Prevention. Core elements of hospital antibiotic stewardship programs. [online] 2016 [cited 2016 June 27]. Available from: URL:<http://www.cdc.gov/getsmart/healthcare/implementation/coreelements.html>
3. Ohl CA, Dodds AES. Antimicrobial stewardship programs in community hospitals: the evidence base and case studies. *Clin Infect Dis.* 2011; 53 (1): 23-8.
4. Septimus EJ, Owens RCJ. Need and potential of antimicrobial stewardship in community hospitals. *Clin Infect Dis.* 2011; 53 (1): 8-14.
5. Bin YB, Rozina A, Junaid M, Saima K, Farhan N, Maham T. A study of unnecessary use of antibiotics at a tertiary care hospital: urgent need to implement antimicrobial stewardship programs. *J Young Pharm.* 2015; 7 (4): 311-9.
6. Zaidi S, Nishtar NA. Rational prescription and use: A snapshot of the evidence from Pakistan and emerging trends. *Int J Pharm Pharm Sci.* 2013; 5 (1): 131-5.
7. Bano N, Najam R, Qazi F. Irrational drug use based on self medication for some common clinical conditions in an educated population of Karachi. *Pak J Med Sci.* 2012; 28 (3): 359-62.
8. Amin A, Khan MA, Azam SMF, Haroon U. Review of prescriber approach towards rational drug Practice in hospitalised patients. *J Ayub Med Coll Abbottabad.* 2011; 23 (1): 19-22.
9. Chishti AL. Irrational Use of Antibiotics in Children. *Pak Pediatr J.* 2015; 39 (3): 129-30.

Dr. Muhammad Faheem Afzal
Assistant Editor, Annals of KEMU
Assistant Professor, Paediatrics
KEMU/Mayo Hospital, Lahore