

State of the Globe: Antimicrobial Stewardship Guides Rationale Use of Antimicrobials to Enable Faster Cure and Prevent Drug Resistance

The Infectious Disease Society of America states that “antimicrobial stewardship refers to coordinated interventions designed to improve and measure the appropriate use of antimicrobials by promoting the selection of the optimal antimicrobial drug regimen, dose, duration of therapy, and route of administration. Antimicrobial stewards seek to achieve optimal clinical outcomes related to antimicrobial use, minimize toxicity and other adverse events, reduce the costs of health-care for infections, and limit the selection for antimicrobial resistant strains.”^[1]

Across health-care systems in different countries, currently there is a need for governmental regulations to mandate the implementation of antimicrobial stewardship. Today, antimicrobial resistance is on the rise. There is a dire need that hospitals and long-term facilities such as nursing homes and physicians forge the development of Antimicrobial Stewardship Program (ASP).

The development of such a program provides tremendous inputs to augment correct use of antimicrobials; thus improving the quality of patient care. This improvement in quality of care impacts reduced treatment costs for patients as well as the hospitals in terms of decreased resistance and better outcomes.

The past century saw a huge influx of new antimicrobials; however, the rate at which new drugs are being developed has slowed down in the last two decades. The United States Food and Drug Administration rate of approving newer antimicrobials fell a dramatic 56% between 1983 and 2002.^[2]

Today, there are efforts by and between researchers, institutions, and pharmaceutical industry to hasten the process of developing newer antimicrobials, but drug

discovery and development is a long process and does not happen in months. The other fact is that microbes have the inherent capacity to modify themselves against any antimicrobial. We have learnt that it is impossible to create an antimicrobial, which is immune to drug resistance.^[3]

Across the world antimicrobial resistance is escalating and the antimicrobial options are decreasing; hence, antimicrobial stewardship is needed to maintain the effectiveness of current day antimicrobials.

No program runs without teamwork. This is even true for ASP, where there is a need for the existence of a team lead by qualified infectious disease specialists and assisted by a laboratory microbiologist with team members from nursing, pharmacy, surgery, and medicine who enjoy the whole hearted support of the administration.

Focus of an institutional ASP should be on developing and implementing (1) Infection Prevention and Control Program and (2) Biological Vigilance and Surveillance Program.

The functions of the above two programs include studying patterns of antibiotics usage and monitoring the developing antimicrobial resistance in the facility. Clinical Education to develop correct culture of preventing infections and monitoring the maintenance and sustenance of that culture is the crucial component of the ASP.

ASP Communication pathways with antimicrobial prescribers should lead to enhanced understanding of both sides toward designing strategies to augment rational use of antimicrobials from a restricted and graded formulary where policies are in place regards empirical antimicrobial therapy, change of antimicrobials prescriptions be it dose, combination, duration, discontinuation and/or escalation.

Regular feedback to the prescribers is the responsibility of the ASP and cooperating with the ASP recommendations is the responsibility of the prescribers.

The study from Saudi Arabia analyses the effects of

Access this article online

Quick Response Code:



Website:
www.jgid.org

DOI:
10.4103/0974-777X.112261

Infectious Disease Consultations, which lead to positive outcomes by reducing the consumption and cost of antimicrobial therapy. In this study, 1444 Infectious disease consultation requests were recorded during a 4 year period. It was interesting to note that antimicrobials were changed in 58.7% of patients and were stopped in 14.7% of cases.^[4] There is a need that this single center study be expanded to multiple centers so we can have robust data to support the impact of Infectious Diseases Consultations, which are a part of ASP program at hospitals, which support the concept.

With rising antimicrobial resistance automatically the cost to cure the same also rises. Once data from ASPs across health facilities shows a reduction in antimicrobial resistance, it will be easier to advocate the cause to convince facilities who do not have such programs.^[5,6]

In the end, the health-care providers and everyone in the health systems should realize that antimicrobial stewardship is in the best interest of our patients who happen to be citizens of our own global village, which is currently facing the crisis of rising antimicrobial resistance and diminishing choices of antimicrobials.

Dhanashree Kelkar, Sagar Galwankar¹

Departments of Infectious Diseases, and ¹Emergency Medicine, Global Hospitals, Mumbai, Maharashtra, India

Address for correspondence:

Dr. Sagar Galwankar, E-mail: gcsagar@yahoo.com

REFERENCES

1. Available from: http://www.idsociety.org/Stewardship_Policy/. [Last accessed on 8th May 2013].
2. Spellberg B, Powers JH, Brass EP, Miller LG, Edwards JE Jr. Trends in antimicrobial drug development: Implications for the future. *Clin Infect Dis* 2004;38:1279-86.
3. MacDougall C, Polk RE. Antimicrobial stewardship programs in health care systems. *Clin Microbiol Rev* 2005;18:638-56.
4. Al-Tawfiq JA. The Pattern and Impact of Infectious Diseases Consultation on Antimicrobial Prescription. *J Glob Infect Dis* 2013;5:45-8.
5. Howard D, Cordell R, McGowan JE Jr, Packard RM, Scott RD 2nd, Solomon SL, *et al*. Measuring the economic costs of antimicrobial resistance in hospital settings: Summary of the Centers for Disease Control and Prevention-Emory Workshop. *Clin Infect Dis* 2001;33:1573-8.
6. Roberts RR, Scott RD 2nd, Cordell R, Solomon SL, Steele L, Kampe LM, *et al*. The use of economic modeling to determine the hospital costs associated with nosocomial infections. *Clin Infect Dis* 2003;36:1424-32.

How to cite this article: Kelkar D, Galwankar S. State of the Globe: Antimicrobial stewardship guides rationale use of antimicrobials to enable faster cure and prevent drug resistance. *J Global Infect Dis* 2013;5:43-4.