Overview

The first half-century of the Antimicrobial Era can be seen as successive cycles in which new antimicrobial agents provided wide control over bacteria until growing resistance to those agents prompted spread of strains resistant to all of them and only the advent of newer agents restored control. This can be seen clearly in Staphylococcus aureus, for which control was lost initially to pandemic penicillin-resistant strains, then to strains additionally resistant to tetracycline, chloramphenicol, etc., then to MRSA and now potentially to Vancomycin-resistant MRSA. Gram-negative bacilli resistant to all available agents were becoming widespread in the late 1960s when introduction of gentamicin and other new aminoglycosides restored control. That control was being lost by the late 1970s, but then introduction of third generation-cephalosporins, fluoroquinolones and carbapenems seemingly provided control of unprecedented depth for nearly a quarter of a century. Over the last decade, however, resistance to all of these agents has grown and has begun to merge so that pan-resistant strains have become a problem in some places and a near-problem in many others. This symposium summarizes this experience and considers ways to anticipate and prevent a new pandemic.

Patients in intensive care units are at increased risk of acquiring antibiotic resistant infections. Among the deadliest and most prevalent infections among ICU patients are bacteremia and hospital-acquired pneumonia, both of which can be caused by gram-negative bacilli. Among the most important risk factors for these infections is excessive consumption of antibiotics exerting selective pressure on bacteria. Infections due to antibiotic-resistant bacteria have a major impact on morbidity and mortality in the ICU. Resistance to fluoroquinolones, ESBLs and carbapenams among gram-negative bacilli in hospitals is becoming critical.

Practitioner education on the subject of antibiotic resistance can increase awareness and improve prudent prescribing practices and thus decrease the incidence of resistance infections. The Alliance for the Prudent Use of Antibiotics (APUA) is a non-profit, international organization solely dedicated to preserving the power of antibiotics. Founded in 1981, APUA conducts educational, research and international networking activities to promote more appropriate use of antibiotics around the world.

APUA has a history of leading successful practitioner education programs at major international health provider conferences. APUA is in a position to provide effective education around the subject of nosocomial gram-negative infections and antibiotic resistance. APUA’s forte is the ability to bring together diverse experts and produce well balanced educational symposiums (generally resulting in the publication of peer-reviewed articles summarizing the discussions). As such, APUA here proposes a symposium on the subject in order to raise practitioner awareness and prescribing practices.

Symposium

APUA will coordinate a 90-minute IDSA affiliated educational program involving presentations of the latest data and clinical approaches on resistance and clinical approaches national experts, including APUA President Stuart Levy. The expert panelist will present the problem of nosocomial gram-negative infections and antibiotic resistance and explore solutions.

Discussion Topics

1. General overview of the gram negative problem:
   • The current key problem agents including Pseudomonas aeruginosa, Klebsiella, pneumoniae, Acinetobacter baumannii
   • The magnitude of associated morbidity and mortality
   • The resistance profiles
   • Identify any antibiotic abuse or infection control issues that are exacerbating the problem

2. Emerging gram negative nosocomial pathogens – i.e., those on the horizon
   • (Stenotrophomonas and others)

3. What are the known model interventions that can be implemented for controlling nosocomial gram negatives?
   • Strategies for curbing resistance
   • Strategies for curbing antibiotic misuse
   • Role of antisepsis and disinfection in controlling spread

Roundtable Discussion