This issue of the Rhode Island Medical Journal (RIMJ) is devoted to Antimicrobial Stewardship. Traditionally, infectious disease (ID) clinicians have been the antibiotic stewards in hospitals. Recently, the basic tenets of antimicrobial stewardship programs (ASPs) have been defined and mandated by the Centers for Disease Control (CDC) and The Joint Commission (TJC).

The essential elements of ASP are based on a multidisciplinary approach led by an ID clinician leader supported by a team of ID-trained clinical PharmDs. Effective ASPs are dependent on close cooperation between infection control (IC) and the microbiology laboratory to track and limit antibiotic resistance. Optimal antibiotic therapy recommendations are based on ID/ASP experience and pharmacokinetic–pharmacodynamic (PK/PD) considerations while minimizing resistance and C. difficile potential. Since each hospital is different, ASPs need to be tailored to each hospital staff’s prescribing habits, formulary restrictions, and local antibiotic usage patterns.

Vital to ASP success is enthusiastic and ongoing administrative financial support for ASP MDs and PharmDs as well as robust IT support (personnel and equipment).

Critical to ASP acceptance and success is antimicrobial education of the medical staff to optimize therapy, minimize resistance and control of C. difficile. ASP interventions in support of these principles include educating and implementing effective monotherapy instead of polypharmacy (often with 2–4 antibiotics when one is sufficient). Therapy should be as short as possible to cure the infection. Other important ASP components include a comprehensive IV-to-PO switch program, which decreases drug acquisition costs and adverse effects and which allows earlier discharge and decreases length-of-stay (LOS).

Following acceptance of IV-to-PO switch therapy, the next step is to acquaint the staff with the even greater advantages of entirely oral (PO) therapy.

Physicians need to be aware of each antibiotic’s resistance potential when selecting therapy, e.g., “high resistance potential” drugs (cefazidime) vs. “low resistance potential” drugs (ceftaxone). Similarly, antibiotics also differ in their C. difficile potential. The antibiotics with a high C. difficile potential are clindamycin, and beta-lactams (excluding ceftaxone). Many other antibiotics have little or no C. difficile potential, e.g., macrolides, tetracyclines, aztreonam, aminoglycosides, vancomycin, colistin, polymyxin B, TMP-SMX, fosfomycin. Some antibiotics are actually protective against C. difficile, e.g., doxycycline, tigecycline. Furthermore, often overlooked are various other drugs that may cause C. difficile, notably, proton-pump inhibitors (PPIs).

As ASPs are implemented, the effectiveness of various interventions is best assessed by prospective audits. As hospitals are all different, this analytical tool is needed to demonstrate what works best for each hospital.

This issue of the RIMJ is dedicated to Rhode Island practitioners. We are most fortunate in the state to have so many experts with a national reputation in clinical ID, antibiotic resistance, IC and hospital epidemiology, as well as medical microbiology. The articles contained in this issue of the RIMJ on ASP were written by leaders in their fields and should be of great interest and practical use to RI practitioners.

Suggested Reading


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