Role of Antibiotic Stewardship in the Era Of Multidrug-resistant Bacteria

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Multidrug-resistant organisms are urgent global public health threats associated with significant mortality and limited available effective therapy. Although the causes of this problem are multifactorial, it is essentially driven by selective pressure from inappropriate antibiotic use. It is crucial to balance the need of broad spectrum antibiotics to cover all likely pathogens with the consequent effect on promoting more resistant organisms. Antibiotic stewardship comprises interventions to improve and measure the appropriate use of antibiotics by optimal selection of antibiotic regimen including dosing, duration of therapy, and route of administration. There is an evidence showing that antibiotic stewardship programs (ASPs) decrease antibiotic use and improve quality of prescriptions, with better patient outcomes and lower rates of antibiotic-resistant organisms. Antibiotic selection for empiric therapy should be considered on the basis of stratified antibiograms (e.g. by location or age) at a hospital level, prior antibiotic exposure, prior positive culture results, and susceptibility test results at an individual patient level. The appropriateness of antibiotics should be reviewed during 48 hours after initial orders. Potential strategies for general practice include the reduction of antibiotic therapy to shortest effective duration and earlier switching from intravenous to oral therapy.

References
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