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Appropriate use of antimicrobials: The peculiarity of septic patients

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The treatment of bloodstream infections remains a significant challenge, with persisting high mortality and morbidity. Appropriate antimicrobial therapy has been shown to reduce mortality among patients with severe infections. In serious infections, the rapidity of antimicrobial therapy following presentation is a critical determinant of outcome for specific conditions including community-acquired pneumonia, ventilator-associated pneumonia, meningitis, bacteremia and septic shock. Moreover, if the therapy is adjusted after the determination of susceptibility, mortality is higher than that of obtained if the treatment is appropriate at the starting of the treatment. However, even if therapy is appropriate and early, mortality remains high in critically ill patients, ranging from 20 to 50%. Rather than appropriate, it is important to define what the term inappropriate means. Usually it is defined as either the use of an antimicrobial agent not covering the infecting microorganisms, or the administration of drugs to which the microorganism responsible for the infection is resistant. An inappropriate dosing regimen is equally significant. Of note, despite appropriate dosage regimens, antimicrobial therapy may fail because of impairment of immunological function,

or because of the inability of the antimicrobial agent to achieve adequate concentrations at the infection site because of alterations in its pharmacokinetics resulting from the underlying pathophysiological condition. To optimize antimicrobial therapy, the clinician must possess knowledge of the pharmacokinetic and pharmacodynamic properties of commonly used antimicrobials, and how these parameters may be affected by the constellation of pathophysiological changes occurring during severe infections. Appropriate antimicrobial therapy must be administered as early as possible to reduce mortality significantly.

Speaker Biography

Francesco Scaglione is a Professor of Pharmacology at School of Medicine and Director of the Post-graduate School of Clinical Pharmacology at University of Milan. He is the Member of the Executive Committee of the International Society of Chemotherapy and Infections, President of the Federation of the European Societies of Chemotherapy and Chairman of ISC-WG and Anti-Infective Pharmacology and BSI. He is a Consultant for Pharmacotherapy in intensive care of two teaching hospitals in Milan. He speaks regularly at international meetings, is currently supervising six PhD students and holds several University appointments. He is author and co-author of more than 200 original articles, published in international journals.

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