

S109

Symposium

**Dosing considerations in cancer patients**

In patients battling cancer, many aspects of antimicrobial treatment become more complex, and standard antimicrobial regimens may be inadequate. Various pathophysiological changes in critically ill patients with cancer significantly affect the pharmacokinetics of antimicrobials. In an unacceptably high percentage of these patients, wide pharmacokinetic variability is apparent with all antibacterial classes and must be compensated for by appropriate dosing unless there is limiting toxicity. Optimized dosing regimens have been developed and clinically validated for beta-lactam and aminoglycoside antibiotics. A growing body of evidence indicates that, for other common antibacterial classes, such as vancomycin, linezolid, daptomycin, and fluoroquinolones, individualized higher dosages based on therapeutic drug monitoring may be required. Selection of less-susceptible subpopulations and, thus, resistance development during therapy as a result of suboptimal dosage regimens particular to patients with cancer occur commonly and require increased attention. Although progress has been made recently, more data and translational studies are needed to individualize and optimize antibiotic dosing regimens in critically ill patients with cancer.