

Managing bacterial infections in the ICU



Selecting antimicrobial therapy for suspected infection in critically ill patients is an important decision-making process for intensivists. Unfortunately, the “appropriateness” of initial antibiotic regimens is becoming increasingly difficult due to the rising levels of bacterial resistance, according to an Editorial article in the journal *Intensive Care Medicine*.

“The rapid evolution of antibiotic resistance impedes efforts to insure that initial appropriate antibiotic therapy is delivered to critically ill infected patients. The rising rates of antibiotic resistance have likely contributed to the increase in observed mortality attributed to antibiotic-resistant bacteria, despite the overall reduction in deaths ascribed to infectious diseases in the last century,” notes the editorial.

Acinetobacter baumannii and *Pseudomonas aeruginosa*, the article says, represent two of the most important multidrug-resistant organisms (MDROs) due to the extent of their antimicrobial resistance, intrinsic virulence, especially for *Pseudomonas*, and ability to establish themselves within hospital environments such as ICUs and to infect immune suppressed hosts.

The further emergence and spread of MDROs can be effectively prevented by reducing the unnecessary use of antibiotics. The article provides a summary of the strategy of antimicrobial de-escalation that can assist intensivists in balancing the desire to treat with an appropriate antibiotic regimen with the need to avoid unnecessary antibiotic exposure.

In particular, there is increasing evidence that rates of catheter-related infections (CRI) can be substantially reduced towards zero with the correct application of care bundles. The cornerstone of prevention relies on the correct skin preparation, the editorial points out. Applying sterile 2% CHG–alcohol to disinfect the skin prior to insertion of a vascular catheter is among the recommendations on CRI prevention. However, transparent antimicrobial dressings, being significantly more efficacious in preventing CRBSIs when compared to the reference dressings and the use of sterile 2% CHG/70% isopropyl alcohol for skin antisepsis, represent new standards of care, according to the editorial.

Moreover, recent studies suggest that source control is a pivotal measure that can improve patients’ outcomes, particularly in intra-abdominal, skin and soft tissue, implant-associated infections and CRI. Source control, recommended within 12 hours from patient’s admission, includes primarily actions taken in the process of care to control the foci of infection. In the Edusepsis study conducted in Spanish ICUs, patients who underwent source control were older, had a greater prevalence of shock, major organ dysfunction, bacteraemia, inflammatory markers, lactic acidemia and worse compliance with the resuscitation bundle compared with those who did not undergo source control. The source control group had lower crude ICU and hospital mortality even after adjustment for confounding factors.

In another Spanish retrospective cohort of intra-abdominal candidiasis (IAC), source control along with early antifungal treatment was associated with improved survival in both ICU and surgical wards, standing out as the main goal for decreasing mortality of IAC episodes inside and outside the ICU.

Source: [Intensive Care Medicine](#)

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