ICU
MANAGEMENT & PRACTICE

Challenges in Stemming the Spread of Resistant Bacteria in Intensive Care

Expanded use of active surveillance for bacteria and of barrier precautions -- specifically, gloves and gowns -- did not reduce the transmission of two important antibiotic-resistant bacteria in hospital-based settings, according to a prospective, randomized clinical trial conducted in 18 intensive care units in the United States. Incomplete compliance by healthcare providers with recommended hand hygiene procedures and the use of gloves and gowns, along with time lags in confirming the presence of bacteria in patients, may have contributed to the findings, which are published in the April 14 issue of the New England Journal of Medicine.

Methicillin-resistant Staphylococcus aureus (MRSA) and vancomycin-resistant enterococcus (VRE) bacteria -- major causes of difficult-to-treat, hospital-based infections -- can be spread from patient to patient on the hands of healthcare providers and via objects and surfaces such as clothing, chairs, doorknobs and medical equipment.In the Strategies to Reduce Transmission of Antimicrobial Resistant Bacteria in Intensive Care Units (STAR*ICU) clinical trial, one of the largest studies looking at the spread of infections in hospitals to date, researchers led by W. Charles Huskins, M.D., of the Mayo Clinic in Rochester, Minn., examined whether actively screening patients for MRSA and VRE and employing greater use of barrier precautions along with hand hygiene among healthcare workers could reduce bacteria transmission in comparison with existing ICU practices.

Active screening of culture samples identified patients not previously known to carry MRSA or VRE bacteria; however, there was no difference in the frequency of new bacteria or infection events between those patients who received care according to the expanded interventions and those in the control group who did not. Trained monitors observed that health care professionals in both the control and intervention groups practiced proper hand hygiene and used gloves and gowns less often than required.The authors conclude that to substantially decrease the transmission of MRSA and VRE bacteria in health care settings, improved compliance with isolation precautions, recommended in some cases, may need to be coupled with interventions to reduce the presence of the bacteria on body sites and decrease environmental contamination.
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W. Charles Huskins, Charmaine M. Huckabee, Naomi P. O'Grady, Patrick Murray, Heather Kopetskie, Louise Zimmer, Mary Ellen Walker, Ronda L. Sinkowitz-Cochran, John A. Jernigan, Matthew Samore, Dennis Wallace, Donald A. Goldmann. Intervention to Reduce Transmission of Resistant Bacteria in Intensive Care. New England Journal of Medicine, 2011; 364 (15): 1407 DOI: 10.1056/NEJMoa1000373

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