

Reducing Transmission of VRE in an Endemic Setting

Montecalvo MA, Jarvis WR, Uman J, Shay DK, Petrullo C, Rodney K, et al. Infection-control measures reduce transmission of vancomycin-resistant enterococci in an endemic setting. *Ann Intern Med* 1999;131:269–72.

Study Overview

Objective. To determine whether enhanced infection-control strategies reduce transmission of vancomycin-resistant enterococci (VRE) in a setting where VRE are endemic.

Design. Prospective cohort study.

Setting and participants. Adult oncology inpatient unit. 184 patients evaluated during use of standard infection-control practices and 259 patients evaluated during use of enhanced infection-control strategies.

Intervention. The standard infection-control strategies included performing contact isolation and obtaining surveillance cultures. The enhanced infection-control strategies added the following measures to the standard strategies: assigning nurses to patient cohorts, assigning patients to geographic locations, providing extensive education to both patients and staff members, using gowns and gloves on room entry, monitoring compliance, and obtaining environmental surveillance cultures.

Main outcome measures. Rates of VRE infection and VRE colonization; changes in antimicrobial use.

Main results. During the use of enhanced infection-control strategies, the incidence of VRE bloodstream infections decreased significantly compared with the control period (0.45 versus 2.1 patients per 1000 patient-days; relative rate ratio, 0.22; 95% confidence interval [CI], 0.05 to 0.92; $P = 0.04$). VRE colonization also decreased significantly (10.3 versus 20.7 patients per 1000 patient-days; relative rate ratio, 0.5; 95% CI, 0.33 to 0.75; $P < 0.001$). Use of the following antimicrobial agents decreased significantly: vancomycin, imipenem-cilastatin, ceftazidime, ciprofloxacin, aztreonam, and gentamicin. Use of clindamycin increased significantly, while the use of amikacin decreased, though not significantly.

Conclusion

Enhanced infection-control strategies can effectively reduce VRE transmission in an inpatient unit in which VRE are endemic.

Commentary

VRE have spread throughout the United States and are an endemic nosocomial pathogen in some hospitals [1,2]. The enhanced infection-control strategies evaluated in this study were issued by the U.S. Centers for Disease Control and Prevention (CDC) to prevent the spread of VRE [3]. The effectiveness of the CDC's strategies in reducing VRE transmission is noteworthy because fairly extensive control strategies were already in place at the hospital unit where the study was conducted.

Applications for Clinical Practice

More research is necessary to identify the specific measures that are most useful in preventing VRE transmission. In the meantime, it seems prudent for clinicians in the appropriate clinical settings to implement all of the measures and carefully monitor their effectiveness.

References

1. Nosocomial enterococci resistant to vancomycin—United States, 1989–1993. *MMWR Morb Mortal Wkly Rep* 1993;42:597–9.
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“Outcomes Research in Review” is edited by Chris L. Pashos, PhD, Vice President and Executive Director of Pharmacoeconomics and Outcomes Research, Abt Associates Clinical Trials, Cambridge, MA, and Associate Editor, Health Policy, Journal of Clinical Outcomes Management. Dr. Pashos selects, summarizes, and provides the commentary on the studies that appear in this section.