Are vancomycin-resistant enterococcal bloodstream infections associated with decreased survival?

Autors

Vanja Piezzi MD[1], Jonas Marschall MD, MSc[1], Niccolò Buetti MD MSc[1,2]

Affiliations

1. Department of Infectious Diseases, Bern University Hospital, University of Bern, Bern, Switzerland

2. IAME, DeSCID team, INSERM, Université Paris Diderot and Sorbonne Paris Cité, Paris, France

Corresponding author: Vanja Piezzi

Tel. +41 31 632 77 36

vanja.piezzi@insel.ch

Dear Editor,

We read with interest a recent article by Papanicolaou and colleagues (1) about the burden of vancomycin-resistant *Enterococcus* (VRE) bloodstream infection (BSI) in patients after allogeneic hematopoietic cell transplantation. VRE BSI was associated with lower overall survival and higher nonrelapse mortality compared to patients with non-VRE BSI or without BSI altogether.

In this cohort study, BSI was defined as a bacterial organism reported from the blood/buffy coat obtained either from peripheral blood or a central venous catheter; clinical information about the relevance of these detections was not available. The Figure S1 (Supplementary data) illustrates that 27% of all BSI (corresponding to approximately 30% of the non-VRE BSI) were due to coagulase-negative *staphylococci* (CoNS, i.e., typical skin contaminants in blood cultures that frequently have no clinical relevance) (2, 3). However, in every comparative study the most appropriate comparator needs to be carefully selected because it influence the results. Given the pathogen mix in the comparator group chosen here, we believe sensitivity analyses are lacking. For example, it would be very interesting to repeat the Cox model excluding typical skin contaminants. Moreover, it would be useful to compare the impact of VRE to that of *Staphylococcus aureus* and of nonfermenting Gram-negative bacilli, respectively.

In addition, in a large cohort study, Kramer *et al.* (4) observed that *E. faecium* in blood cultures was an independent risk factor for in-hospital mortality and prolonged the hospital stay. In other words, vancomycin resistance did not further increase the mortality or morbidity among patients with *E. faecium* isolates. A specific sub-group analysis comparing vancomycin-resistant *E. faecium* with vancomycin-sensitive *E. faecium* would therefore also be of interest.

While the authors are to be commended for their work, we believe these additional analyses would permit a more precise estimate of the marginal mortality due to VRE BSI.

Funding statement

NB is currently receiving a Post.doc Mobility grant from the Swiss National Science Foundation

(grant number: P400PM_183865) and a grant from the Bangerter-Rhyner Foundation.

Conflict of interest

No conflict

References

1. Papanicolaou GA, Ustun C, Young JH, Chen M, Kim S, Woo Ahn K, et al. Bloodstream Infection Due to Vancomycin-resistant Enterococcus Is Associated With Increased Mortality After Hematopoietic Cell Transplantation for Acute Leukemia and Myelodysplastic Syndrome: A Multicenter, Retrospective Cohort Study. Clinical infectious diseases : an official publication of the Infectious Diseases Society of America. 2019;69(10):1771-9.

2. Dargere S, Cormier H, Verdon R. Contaminants in blood cultures: importance, implications, interpretation and prevention. Clinical microbiology and infection : the official publication of the European Society of Clinical Microbiology and Infectious Diseases. 2018;24(9):964-9.

3. Becker K, Heilmann C, Peters G. Coagulase-negative staphylococci. Clinical microbiology reviews. 2014;27(4):870-926.

4. Kramer TS, Remschmidt C, Werner S, Behnke M, Schwab F, Werner G, et al. The importance of adjusting for enterococcus species when assessing the burden of vancomycin resistance: a cohort study including over 1000 cases of enterococcal bloodstream infections. Antimicrobial Resistance & Infection Control. 2018;7(1):133.