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P2342 Impact of vancomycin-resistant enteroccoci infection and colonisation on patient outcomes: a retrospective study in a German tertiary care hospital

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Background: Enterococci are low virulent commensals in the human gastrointestinal tract. Resistance to vancomycin was first described in the late 1980s. Since then vancomycin-resistant enterococci (VRE) have been emerging as a cause for health care associated infections. Studies imply that VRE infections are associated with a longer length of stay, higher hospital costs and increased mortality. In contrast, there is no information on the impact of colonization with VRE on patient outcomes. Furthermore, differentiating between nosocomial (nVRE) and community-acquired VRE (caVRE) regarding outcomes is often not done.

Materials/methods: We analyzed data from 2012 to 2017 in a large tertiary care hospital in Leipzig, Germany. Patients with VRE infection or colonization were identified and compared to patients without VRE. Antibiotic consumption was also monitored.

Results: We analyzed 720 patients with 796 VRE isolates. *Enterococcus faecium* was detected in 661 (83.04%), *Enterococcus casseliflavus* in 25 (3.14%), 69 VRE isolates (8.67%) were not classified and other species were detected in 41 cases (5.15%). Nosocomial VRE contracted 549 cases (76.3%). Incidence increased from 0.23% (2012) to 0.41% in 2017 ($p < 0.05$). VRE patients had a longer length of stay (LOS) in the hospital compared to all patients (36.44 days, 95% CI: 34.11-38.77 vs. 7.11 days; 95% CI: 7.07-7.14). Patients with VRE infection were significantly ($p < 0.01$) longer hospitalized than those with colonization (42.23 days; 95% CI: 37.95; 46.51 vs. 32.63 days; 95% CI: 30.03; 35.23). Patients with nVRE had a mean LOS of 42.5 days (95% CI: 39.7-45.3), while mean LOS in patients with caVRE was 16.9 days (95% CI: 14.55-19.29), respectively. In general, a LOS above average increased significantly the risk of nVRE (OR 17.4; 95% CI: 13.07-22.48) irrespective of colonization or infection. In hospital mortality was increased (OR 12.03; 95% CI: 10.16; 14.25, $p < 0.01$). No correlation was found between overall consumption of antibiotics and VRE incidence.

Conclusions: Both colonization and infections with VRE have an impact on case fatality rate and LOS in hospitalized patients. Risk of nVRE acquisition increases with the LOS. These findings are relevant for implementing measures to reduce the burden of VRE.