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Vancomycin-resistant enterococci isolates colonizing and infecting haematology patients: clonality and virulence and resistance profile

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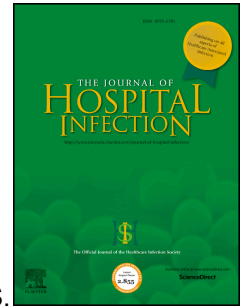
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1 **Vancomycin-resistant enterococci isolates colonizing and infecting haematology patients:**
2 **clonality and virulence and resistance profile.**

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20 **Summary**

21 Vancomycin-resistant enterococci (VRE) are an important agent of colonization and infection in
22 haematology patients. However, the role of virulence on VRE colonization and infection is
23 controversial. The aim of this study was to characterize the lineage, virulence and resistance
24 profile of VRE infection and colonization isolates; as well as their impact on outcome of
25 haematology patients using a regression logistic model.

26 **Methods:** Eighty-six isolates (80 *Enterococcus faecium* and 6 *E. faecalis*) from 76 patients were
27 evaluated. Polymerase chain reaction (PCR) for resistance and virulence genes, and pulsed-
28 field gel electrophoresis (PFGE) and whole genome sequencing of the major clusters, were
29 performed. Bivariate and multivariate analyses were carried out to evaluate the role of
30 virulence genes on outcome.

31 **Results:** All isolates harboured the *vanA* gene. Regarding the virulence genes, 96.5% of isolates
32 were positive for *esp*, 69.8% for *gelE* and *asa1* genes. VRE infection isolates were more virulent
33 than colonization isolates and harboured more often *gelE* gene ($p=0.008$). Infections caused by
34 VRE carrying *asa1* gene resulted more frequently in death ($p =0.004$), however only

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