

**P0557 Clinical characteristics of biofilm-forming enterococci associated with bacteraemia and their impact on the disease outcome**

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**Background:** *Enterococcus faecalis* and *Enterococcus faecium* are the most commonly isolated enterococci from bacteraemia episodes. Although both the species are capable of producing biofilm, no data are to date available regarding the risk factors for developing biofilm-forming (BF) *Enterococcus* bacteraemia or the variables associated with the outcome of patients treated for this disease.

**Methods:** We retrospectively studied 67 isolates of *E. faecalis* and *E. faecium* recovered from bacteraemia episodes at a tertiary care hospital in Rome, Italy, between January and December 2015. We evaluated biofilm formation by the crystal violet assay, and we grouped the isolates into quartiles based on their level of biomass distribution. This allowed classifying the isolates as low, moderate or high biofilm-formers (LBFs, MBFs or HBFs). We performed pairwise comparisons using Mann-Whitney test with Bonferroni's correction. We estimated risk factors by univariate and multivariate stepwise logistic regression analyses, and we used a Cox proportional hazards regression model to assess the variables that were independently associated with in-hospital mortality. We set statistical significance at a *P* value of <0.05.

**Results:** The isolates were classified as LBFs, MBFs or HBFs according to the cut-off values of  $\leq 0.08$ ,  $>0.08-\leq 0.1$ , and  $>0.1$ , respectively. Thus, we identified 15 HBFs, 34 MBFs and 18 LBFs among 67 patient-unique isolates. By comparing HBF/MBF and LBF groups (49 patients and 18 patients, respectively), we found that HBF/MBF infected patients were more likely to have an underlying cardiovascular disease (OR 4.1; 95% CI, 1.1–15.4, *P* = 0.03) or be infected by *E. faecalis* (OR 4.8; 95% CI, 1.4–17.0, *P* = 0.01). Age (HR, 1.05; 95% CI 1.01–1.10, *P* = 0.03) was associated with higher mortality, whereas albumin serum level (HR, 0.82; 95% CI 0.74–0.92, *P* <0.001) was associated with lower mortality. Surprisingly, we found that HBFs/MBFs were not significantly associated with increased patients' mortality.

**Conclusions:** This study identified suffering from a cardiovascular disease or having an *E. faecalis* bacteraemia episode as significant risk factors for the infection by *Enterococcus* HBF/MBF. We noted that the biofilm formation isolate's level did have no impact on the mortality in our *Enterococcus* bacteraemia patients.

