P2339 Virulence factors among Enterococcus faecalis-causing infective endocarditis in a tertiary hospital 2011-2017

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Background: Enterococcus faecalis is a frequent cause of bacteraemia and IE in adult patients which pathogenicity has been related to different virulence factors. This study aimed to analyze the characteristics of patients with EFAE-IE and their relationship with virulence factors.

Materials/methods: All EFAE strains causing monomicrobial bacteraemia from 2011 to 2017 were included. Strains were identified by Maldi-TOF (Bruker®). Virulence factors related to adhesion (efaA, asa1 and esp), citotoxicity (cylA) and invasiveness (hyl and gelE) were tested by PCR. EI was diagnosed following the modified Duke criteria. Clinical characteristics of patients were recorded.

Results: A total of 241 monomicrobial EFAE bacteraemia episodes were detected over the study period. Patients with EFAE-IE (n=34) were mainly men (73.5%) and older (mean age 71; IQR: 56-79). Eight patients were older than 80 (23.5%). Definitive or probably IE was diagnosed in 17 patients each. The most frequent valves affected were aortic and mitral (n=16, 47%). 21 patients (62%) had native valve IE and 13 had prosthetic valve IE (9 biological). The most frequent complications were ictus (n=2) and osteoarticular septic metastases (n=5). Twenty-five patients cured (71.4%), six died (17.1%, all attributable to IE) and two relapsed over the follow-up (5.7%).

185 strains were available for virulence testing (n=31 EI, n=154 other). The distribution of virulence factors among isolates causing IE or other infections was: asa1 (77.4%; 73.9%); esp (38.7%; 40.5%); efaA (96.8%; 98.0%); cylA (29.0%; 27.5%); gelE (83.7%; 73.9%). None of the isolates harboured the hyl gene. The virulence profile more frequently found in both bacteraemic and EI isolates contained asa1, gelE, efaA genes (24.8% vs 29.0%, respectively). The second predominant profile for EI was efaA(+) asa1(+) esp(+) cylA(+) hyl(−) gelE(+) that accounted for 16.1% of EI strains and 7.8% of bacteraemia. These differences were not statistically significant. Moreover, among EFAE causing IE, no differences between the virulence profiles were found when compared IE over prosthetic or native valves.

Conclusions: EFAE causing bacteraemia frequently harbour virulence factors related to adhesion and invasiveness. Besides no statistical significant differences were observed, strains causing IE sum a greater number of virulence factors than those that cause bacteraemia from other foci.