28th ECCMID EUROPEAN CONGRESS OF CLINICAL MICROBIOLOGY AND INFECTIOUS DISEASES
Madrid, Spain
21 – 24 April 2018

P0455 Growing proportions of bloodstream infection (BSI) due to Enterococcus faecium versus Enterococcus faecalis in the UK: a long temporal shift

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Background: Enterococci are among the top 10 pathogens causing bloodstream infections (BSI). *E. faecalis* was the prevalent species, but *E. faecium* the more resistant. We reviewed temporal changes, using surveillance data from the British Society for Antimicrobial Chemotherapy (BSAC) (2001-16) and Public Health England (PHE) bacteraemia surveillance data (2000-16).

Materials/methods: BSAC surveillance collects 7-10 consecutive bloodstream enterococci annually from each of 25-40 UK and Irish hospitals. Until 2012, isolates were identified by PCR and subsequently by MALDI-ToF; susceptibility testing is by BSAC agar dilution. PHE surveillance entails hospitals in England, Wales and Northern Ireland reporting their own susceptibility results; participation has grown with time: almost all laboratories contributed by 2016 with about 94% of BSI reported.

Results: Among 206-255 enterococci isolates received annually in the BSAC surveillance, the proportion of *E. faecium* grew from 30.2-34.0% in 2001-4 to 41.4-46.0% in 2012-15, whilst the proportion of *E. faecalis* fell from 59.1-68.0% in 2001-4 to 48.8-52.9% in 2012-15. In 2016 *E. faecium* (51.4%) exceeded *E. faecalis* (42.5%), with minor species comprising 6.1%. Taking all years together, rates of resistance to ampicillin, vancomycin and high-level gentamicin were 96.3%, 27.4% and 49.4% in *E. faecium*, with small rises in the early years,versus 0%, 2.3%, and 41.2% among *E. faecalis*, without temporal change. PHE data provided a larger sample, with 2840 reports of enterococcal BSI in 2000 and 5000-7000 per annum from 2003-2016. Reported *E. faecalis* doubled from 1345 to 2904 from 2000 to 2016, whilst *E. faecium* quintupled from 540 to 2625. However, this analysis is confounded by large (though declining) numbers of reports of isolates only identified to genus level. A more accurate picture is gained by categorising according to ampicillin/amoxicillin susceptibility data: here the percentage found resistant, and putatively corresponding to *E. faecium*, rose from 31-36% in 2000-2001 to 44-45% in 2015-2016, supporting a similar shift to that seen in the BSAC surveillance.

Conclusions: Both surveillances indicate a growing importance of *E. faecium* in enterococcal BSI. This is important because fewer therapeutic options remain against this frequently multiresistant species than against *E. faecalis*.