

P2828 Linked rifampicin and teicoplanin resistance in *Staphylococcus epidermidis* from bacteraemia in the UK and IrelandCarolyne Horner*¹, Shazad Mushtaq², David Livermore³

¹ The British Society for Antimicrobial Chemotherapy, Birmingham, United Kingdom, ² Public Health England, London, United Kingdom, ³ Faculty of Medical and Health Sciences, University of East Anglia, Norwich, United Kingdom

Background: Infections involving coagulase-negative staphylococci (CoNS) were assumed to originate from endogenous skin flora but, in 2018, 3 global lineages of *S. epidermidis* were recognised as agents of nosocomial infection. These are multidrug-resistant with a link between rifampicin resistance and raised teicoplanin MICs. Long-term CoNS surveillance data are scarce, but are included in the British Society for Antimicrobial Chemotherapy (BSAC) Bacteraemia Programme. We reviewed the collected data.

Materials/methods: The BSAC surveillance has collected 7-10 consecutive CoNS causing clinically significant bacteraemia annually from 24-40 UK and Irish hospitals from 2001-17. Identification was by PCR until 2005, then MALDI-ToF from 2013; CoNS were not identified to species level from 2006-12; *mecA* was sought by PCR, with susceptibility testing by BSAC agar dilution, including rifampicin from 2003.

Results: Among 3533 CoNS tested, 1698 (48%) were identified to species level and 1082 (64%) were *S. epidermidis* with rifampicin data: 376 from 2003-05 and 706 from 2013-17; 77% (n=835) *S. epidermidis* had oxacillin resistance and/or *mecA*; 76% (n=825) were multidrug resistant to ≥ 3 antimicrobial classes. Rifampicin MICs were highly stratified, with 88% of values < 0.25 mg/L and 11% > 16 mg/L. Teicoplanin data are tabulated in relation to oxacillin and rifampicin status, showing that (i) geometric mean teicoplanin MICs, and the prevalence of resistance (MIC > 4 mg/L) have risen for all groups except the oxacillin-S, rifampicin-R isolates, and (ii) the highest rate of teicoplanin resistance (57%) was for recent isolates resistant to oxacillin and rifampicin.

Anti microbial	2003 -5	2013 -7	Geometric mean teicoplanin MIC				
**Oxacillin	Rifampicin	**n*	Teicoplanin MIC >4 mg/L (%)	**n*	Teicoplanin MIC >4 mg/L (%)	2003 -5	2013 -7
S	[<]{.underline}0.25	65	5	174	18	1.76	3.24
S	[>]{.underline}16	3	0	3	0	4.00	2.52
R	[<]{.underline}0.25	257	7	458	30	2.67	4.24
R	[>]{.underline}16	46	26	68	57	3.94	5.32

*Eight isolates had a rifampicin MIC between >0.25mg/L and <16mg/L.

Conclusions: Teicoplanin resistance has increased in *S. epidermidis* and was associated with resistance to oxacillin and rifampicin. This may reflect the spread of one or more of the epidemic lineages with this phenotype. Long-term surveillance is crucial to our understanding when unexpected resistance linkages are recognised.

