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P1867 Activity of ceftaroline and ceftobiprole against staphylococci and *Streptococcus pneumoniae* in the UK and Ireland

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Background: Ceftaroline and ceftobiprole are cephalosporins active against methicillin-resistant *Staphylococcus aureus* (MRSA). There are few published comparisons of their activity. We reviewed the susceptibility data for staphylococci and *Streptococcus pneumoniae* causing clinically significant bacteraemia, and *S. pneumoniae* causing community-onset pneumonia, collected by the British Society for Antimicrobial Chemotherapy (BSAC) Resistance Surveillance Programme.

Materials/methods: The BSAC surveillance has collected bloodstream *S. aureus*, (238-522 p.a) *S. pneumoniae* (201-247 p.a.), and coagulase-negative staphylococci (CoNS, 179-225 p.a.) from 24-40 UK and Irish hospitals from 2001-17, and respiratory *S. pneumoniae* since 1999 (345-809 p.a.). Ceftaroline and ceftobiprole were tested in parallel by BSAC agar dilution in 2008, 2013 and 2017. *S. aureus* breakpoints (ceftaroline ≤1/>2mg/L; ceftobiprole <2/>2mg/L) were assumed for CoNS.

Results: Isolates tested with both agents comprised: 1428 *S. aureus* (MRSA: 210; MSSA: 1218); 989 *S. pneumoniae* (bacteraemia: 644; respiratory: 345), and 612 CoNS. MIC ranges, modes and geometric means are tabulated. Modal MICs did not change between years; distributions and geometric means did not change significantly. Ceftaroline MICs for staphylococci tended to be 2-fold lower than ceftobiprole, but ceftobiprole has a 2-fold higher breakpoint. Ten MRSA (2mg/L) and 1 oxacillin-resistant CoNS (4mg/L) were non-susceptibile to ceftaroline. All *S. aureus* were susceptible to ceftobiprole, whereas 40 CoNS were non-susceptible (MIC 4-8mg/L). One *S. pneumoniae* (serotype 19F) was non-susceptible to both ceftaroline (MIC 0.5mg/L) and ceftobiprole (MIC 1mg/L); two other *S. pneumoniae* (serotype 19F and 19A) were non-susceptible to ceftobiprole (MIC 1 mg/L).

		Ceftaroline MIC (mg/L)	**Ceftobiprole MIC (mg/L)**				
Organism	n	Range	Mode	Geom. mean	Range	Mode	Geom. mean
S. pneumoniae	989	≤0.002 - 0.5	0.008	0.008	0.004- 1	0.015	0.015
S. aureus	1428	0.006- 2	0.25	0.8	0.125- 2	0.5	1.38
> MRSA	210	0.25-2	1	0.34	0.5-2	1	0.62
> MSSA	1218	0.06-1	0.25	0.79	0.125- 2	0.5	1.38
CoNS	612	≤0.002 -4	0.25	0.23	0.015- 8	1	0.67
> CoNS-oxacillin-R	431	≤0.002 -4	0.125	0.23	0.015- 8	1	0.67
> CoNS-oxacillin-S	181	0.015- 0.5	0.06	0.24	0.015- 2	0.25	0.67

Conclusions: Ceftaroline and ceftobiprole have similarly good activity against staphylococci and pneumococci. Choices between which agent to prefer should be predicated on other differentiating factors including licensed indications, reported clinical experience, and importance, or not, of Gram-negative coverage.