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Abstract (poster session)

Activity of ceftaroline tested against methicillin-resistant *Staphylococcus aureus* clones from Australia and New Zealand, 2010

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Objective: To evaluate the activity of ceftaroline (CPT) against methicillin-resistant *Staphylococcus aureus* (MRSA) clones isolated from patients in Australia (AUS) and New Zealand (NZ). CPT, the active metabolite of the prodrug ceftaroline fosamil, is a novel cephalosporin exhibiting broad-spectrum in vitro bactericidal activity against Gram-positive organisms, including MRSA. We evaluated the activity of CPT against MRSA clones isolated from patients in AUS and NZ. Methods: Susceptibility testing for CPT and comparator antimicrobials was performed using CLSI broth microdilution methods on 141 isolates obtained from AUS (n=131) and NZ (n=10) as part of the SENTRY Programme, Asia Pacific Region (2010). Isolates were assigned to their clonal complex (CC) using a novel HRM SNP typing assay (Minim typing). Results: Hospital-associated clones (CC8 and CC22) accounted for 48% of all MRSA isolates examined. CPT demonstrated good activity against all MRSA CC's. CPT MIC90 values (0.5 mg/L) were lower for MRSA strains with community-associated clonal complexes (CC93, CC1, CC30, CC5, and CC88). Resistance to mupirocin, tetracycline, gentamicin, fusidic acid, erythromycin, or cotrimoxazole did not affect CPT activity against MRSA isolates (overall MIC90, 1 mg/L; range 0.5-2 mg/L by CC). No vancomycin-intermediate or -resistant strains were detected. Conclusion: CPT exhibited potent activity against MRSA isolates and commonly circulating clonal complexes from AUS and NZ, in both community and hospital settings. All community-associated isolates had both MIC50 and MIC90 of 0.5 mg/L. Compared to community-associated MRSA clones, some hospital clones had slightly higher CPT MIC values, especially CC8 (MIC90, 2 mg/L).

Clonal complex (no. tested)	Ceftaroline MIC (mg/L)				MIC ₅₀	MIC ₉₀
	0.25	0.5	1	2		
Hospital						
8 (43)		4	34	5	1	2
22 (25)		21	4		0.5	1
Community						
93 (30)	1	29			0.5	0.5
1 (15)		15			0.5	0.5
30 (15)		14	1		0.5	0.5
5 (9)	2	7			0.5	
88 (2)		2			0.5	
45 (1)		1			0.5	
59 (1)		1			0.5	
All (141)	3	94	39	5	0.5	1