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Abstract (poster session)

Antimicrobial activity of ceftaroline and comparator agents tested against organisms causing skin and soft tissue infections in European medical centres (2011)

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Objective: To evaluate the spectrum and potency of ceftaroline (CPT) against contemporary (2011) pathogens causing complicated skin and soft tissue infections (cSSTI) isolated in Europe. CPT is the active metabolite of the prodrug CPT fosamil, a new parenteral cephalosporin recently approved by the European Medicines Agency for treatment of adults with cSSTI and community-acquired pneumonia. CPT is the only cephalosporin currently approved for the treatment of MRSA cSSTI infections. Methods: 2205 organisms from SENTRY Programme as part of the 2011 AWARE CPT surveillance study in Europe were isolated from cSSTI. Isolates were collected from patients in 41 medical centres in 16 European countries (including Israel and Turkey). Susceptibility (S) testing for CPT and commonly used antimicrobials was performed by CLSI broth microdilution method. S interpretations for CPT and comparators were as published by EUCAST. Extended spectrum beta-lactamase (ESBL) phenotype was determined per CLSI guidelines. Results: 25.7% of Staphylococcus aureus isolates were resistant (R) to oxacillin (MRSA). CPT was very active against methicillin-S S. aureus (MSSA; MIC90, 0.25 mg/L; 100.0% S) and MRSA (MIC90, 2 mg/L; 89.7% S). Against MSSA, CPT was 16-, four- and four-fold more active than ceftriaxone (CRO), linezolid and vancomycin, respectively. MRSA showed high R rates to levofloxacin (LEV; 75.8%) and clindamycin (33.0%). Beta-haemolytic streptococci were highly CPT-S (MIC90, <=0.015 mg/L; highest MIC, 0.06 mg/L). CPT exhibited good activity against non-ESBL-phenotype strains of Klebsiella spp. and Escherichia coli (MIC90, 0.5-1 mg/L), but limited activity against ESBL-producing and/or CRO-R strains. ESBL-phenotype Klebsiella spp. and E. coli also exhibited high R rates to LEV (58.2% and 72.2%, respectively) and gentamicin (51.9% and 40.9%, respectively). Furthermore, 21.5% of ESBL-phenotype Klebsiella spp. showed decreased S (MIC, >=4 mg/L) to meropenem. Among Morganella morganii strains, 67.9% and 82.1% were S to CPT and CRO, respectively. Conclusions: CPT demonstrated in vitro activity against Gram-positive organisms, including MRSA strains, and non-ESBL-phenotype Enterobacteriaceae isolated from patients with documented cSSTI in Europe. These results indicate that CPT has a good in vitro activity profile against contemporary pathogens responsible for cSSTI in Europe, including MRSA.

	Cumulative % inhibited at ceftaroline MIC (mg/L) of:									
Organism (no.)	≤0.015	0.03	0.06	0.12	0.25	0.5	1	2	4	8
S. aureus (1,319)	-	-	0.4	11.5	73.2	86.4	97.4	100.0	-	-
MSSA (980)	-	-	0.5	15.5	97.5	100.0	-	-	-	-
MRSA (339)	-	-	-	-	3.2	47.2	89.7	100.0	-	-
β-haemolytic strep (210)	93.8	99.1	100.0	-	-	-	-	-	-	-
E. coli (437)	0.2	9.2	32.5	50.6	59.0	65.2	70.0	72.1	73.7	75.1
Non-ESBL (322)	0.3	12.4	44.1	68.6	80.1	88.2	94.4	96.9	98.1	99.7
ESBL (115)	-	-	-	-	-	0.9	1.7	2.6	5.2	6.1
Klebsiella spp. (183)	-	3.3	25.7	33.8	49.2	54.1	55.7	56.3	58.5	60.7
Non-ESBL (104)	-	5.8	45.2	68.3	86.5	95.2	98.1	99.0	100.0	-
ESBL (79)	-	-	-	-	-	-	-	-	3.8	8.9
M. morganii (56)	-	10.7	35.7	55.4	60.7	67.9	71.4	71.4	75.0	76.8