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Abstract (poster session)

In vitro activity of ceftaroline against Gram-positive and Gram-negative pathogens obtained from hospitalised, skin-infected patients in Germany, 2011-2012

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Objectives: Ceftaroline (CPT), the active form of the new parenteral prodrug CPT fosamil, has shown in vitro activity against Gram-positive and common Gram-negative pathogens, including MRSA. It is not active, however, against ESBL-producing Enterobacteriaceae and non-fermenters. CPT fosamil has recently been approved by the European Medicines Agency for treatment of adults with complicated skin and soft tissue infections (cSSTI) and community-acquired pneumonia. The purpose of this study was to assess the potency of CPT against a German collection of clinical isolates from patients with hospitalised cSSTIs prior to its clinical use. Methods: Isolates recovered from blood or relevant wound specimens were consecutively collected from October 2011 to April 2012 in 19 laboratories located in all regions of Germany. Bacterial species and phenotypes tested were methicllin-susceptible Staphylococcus aureus (MSSA), MRSA, various streptococcal species and ceftriaxone (CRO)-susceptible isolates of five common Enterobacteriaceae species (Escherichia coli, Enterobacter cloacae, Klebsiella oxytoca, K. pneumoniae, Proteus mirabilis). Organisms were shipped to a coordinating laboratory for species confirmation and susceptibility testing. MICs of CPT and 14 comparator agents were determined by the microdilution method according to the standard ISO 20776-1 and interpreted by EUCAST species-related clinical breakpoints, if applicable. Results: A total of 1,953 bacterial strains were analysed. MIC-50/90 values of CPT are presented in the Table. All MSSA as well as 356/361 (98.6%) MRSA isolates were susceptible to CPT (MICs <=1 mg/L). MICs of CPT for the five CPT-resistant strains were 2 mg/L, but turned out to be 1 mg/L (susceptible) in a second test. The highest MIC observed for CPT among streptococcal isolates was 0.03 mg/L. Among the CRO-susceptible Enterobacteriaceae, all isolates of E. cloacae and P. mirabilis were susceptible to CPT (MICs <=0.5 mg/L), while 2.6%, 1.8% and 4.5% of the E. coli, K. oxytoca and K. pneumoniae isolates, respectively, were resistant. Conclusion: Based on the results of this surveillance study, CPT was active in vitro against pathogens associated with hospitalised cSSTIs, and CPT fosamil may represent a suitable option for the empiric treatment in clinical situations in which MRSA is suspected.

Table: MIC-50/90 values of CPT (mg/L)

Species / phenotype (n)	MIC-50	MIC-90
MSSA (435)	0.25	0.25
MRSA (361)	1	1
Strep. pyogenes (214)	≤0.008	≤0.008
Strep. agalactiae (179)	≤0.008	0.016
Strep. dysagalactiae (91)	≤0.008	≤0.008
Strep. anginosus (65)	≤0.008	0.016
Strep. constellatus (21)	≤0.008	0.016
CRO-susc. Esch. coli (229)	0.125	0.5
CRO-susc. Prot. mirabilis (127)	0.063	0.25
CRO-susc. Ent. cloacae (87)	0.125	0.5
CRO-susc. Kleb. pneumoniae (89)	0.063	0.5
CRO-susc. Kleb. oxytoca (55)	0.125	0.5