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P1869 *In vitro* activities of ceftaroline and comparator agents against bacterial pathogens collected from patients with skin and soft tissue infections from Europe stratified by region: ATLAS Global Surveillance Program 2015-2017

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Background: Ceftaroline fosamil, the prodrug of ceftaroline, is a parenteral cephem approved by the EMA for the treatment of adults and children aged ≥2 months with complicated SSTIs caused by susceptible isolates of *Staphylococcus aureus* (including methicillin-resistant isolates), *Streptococcus pyogenes*, *Streptococcus agalactiae*, *Streptococcus dysgalactiae*, *Streptococcus anginosis* group, *Escherichia coli*, *Klebsiella pneumoniae*, *Klebsiella oxytoca*, and *Morganella morganii*. The current study is part of the ATLAS (Antimicrobial Testing Leadership and Surveillance) program and evaluated the current activities of ceftaroline and comparator agents against commonly encountered bacterial isolates associated with SSTIs.

Materials/methods: From 2015 to 2017 the ATLAS program received 16,914 bacterial isolates that had been cultured by 83 clinical laboratories in 17 countries in Europe from samples of patients diagnosed with SSTIs. All isolates were transported to IHMA, Inc., (Schaumburg, IL, USA) where their identities were confirmed using MALDI-TOF mass spectrometry and antimicrobial susceptibility testing performed following standardized CLSI broth microdilution methodology (M07-A11, 2018). Percent susceptibilities were determined using 2018 EUCAST MIC breakpoints (v. 8.1) where available. Ceftaroline percent susceptibility for *Streptococcus pyogenes* was determined using CLSI M100 MIC breakpoints (≤0.5 mg/L; 28th edition, 2018) because EUCAST does not publish MIC breakpoints for this organism-antimicrobial agent combination. Phenotypic ESBL screening and confirmatory testing were performed using the CLSI M100 method (28th edition, 2018).

Results: The *in vitro* activity of ceftaroline (percent susceptibility and the concentration of ceftaroline [mg/L] that inhibited 90% of isolates tested [MIC_{90}]) is summarized in the following table.

Bacterial Pathogen[a]	Ceftaroline % Susceptible/MIC_{90}[b] (No. of Isolates Tested)		
	Europe	NW Europe[c]	SC Europe[d]
Staphylococcus aureus, MSSA	100/0.25 (3,021)	100/0.25 (1,819)	100/0.25 (1,202)
Staphylococcus aureus, MRSA	97.1/1 (4,145)	98.1/1 (2,945)	94.8/1 (1,200)
Streptococcus pyogenes	100/0.008 (1,260)	100/0.008 (870)	100/0.008 (390)
Enterobacteriaceae, All isolates	65.1/>128 (4,782)	71.3/>128 (2,970)	64.0/>128 (1,812)
Enterobacteriaceae, ESBL-negative[e]	92.6/0.5 (2,246)	92.1/0.5 (1,445)	93.4/0.5 (801)

[a] MSSA, methicillin-susceptible *S. aureus*; MRSA, methicillin-resistant *S. aureus*.
[b] mg/L.
[c] NW Europe, North-Western Europe.
[d] SC Europe, South-Central Europe.
[e] Isolates of ESBL-negative *Enterobacteriaceae* were comprised of 1,118 *Escherichia coli*, 545 *Klebsiella pneumoniae*, 245 *Klebsiella oxytoca* and 338 *Proteus mirabilis*.

Conclusions: Ceftaroline demonstrated potent *in vitro* activity against a 2015-2017 European collection of bacterial pathogens commonly associated with SSTI. All isolates of MSSA were susceptible to ceftaroline as were 97.1% of isolates of MRSA. Of the 118 ceftaroline-nonsusceptible isolates of MRSA, 116 (98%) had MIC values in the intermediate range (2 mg/L). Geographic differences in the *in vitro* susceptibility of isolates to ceftaroline were

observed for MRSA (3.3% higher susceptibility rate for isolates from NW Europe), and all isolates of *Enterobacteriaceae* (7.3% higher susceptibility rate for isolates from NW Europe). Ceftaroline susceptiblity of ESBL-negative isolates was similar in NW Europe (92.1%) and SC Europe (93.4%).