

P1817 Frequency of occurrence and antimicrobial susceptibility of bacteria isolated from patients hospitalized with community-acquired bacterial pneumonia: evaluation of ceftaroline potency and antimicrobial spectrum

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Background: The SENTRY Antimicrobial Surveillance Program monitors the frequency of occurrence and antimicrobial susceptibility of organisms from various infection types worldwide. In this investigation, we present the results for organisms isolated from patients hospitalised with community-acquired bacterial pneumonia (CABP).

Materials/methods: A total of 2,267 bacterial isolates were consecutively collected in 2014–2016 from 62 medical centres located in western Europe (W-EU; 19 centres from 9 nations), eastern EU and the Mediterranean region (E-EU; 16 centres from 12 nations), the Asia-Pacific region (APAC; 16 centres from 9 nations), and Latin America (LATAM; 11 centres from 9 nations). Isolates were collected from lower respiratory tract specimens, and an isolate obtained from an outpatient or earlier than 48 hours after hospitalisation was considered community-acquired. Organisms were tested for susceptibility against ceftaroline and comparator agents by reference broth microdilution methods in a central laboratory. EUCAST breakpoint criteria were applied.

Results: The top 4 organisms observed were the same in all 4 regions: *Staphylococcus aureus* (SA), *Klebsiella* spp. (KSP), *Escherichia coli* (EC), and *Enterobacter* spp. (ESP). *Serratia* spp., *Haemophilus influenzae* (HI), and *Streptococcus pneumoniae* (SPN) ranked fifth, sixth, and seventh overall, respectively, but their frequencies and rank orders varied among regions. Among SA, methicillin resistance rates varied from 16.7% (E-EU) to 29.0% (W-EU), 26.7% overall; ceftaroline susceptibility varied from 93.2% (LATAM) to 98.6% (APAC), 96.2% overall. Among SPN, 98.6% of isolates were ceftaroline-susceptible (only 1 nonsusceptible isolate [from Taiwan; MIC, 0.5 mg/L]). In contrast, 78.6% of SPN isolates were ceftriaxone-susceptible. Beta-lactamase production among HI varied from 47.6% (APAC) to 16.7% (W-EU), and 96.6% of isolates were ceftaroline-susceptible at ≤ 0.03 mg/L (EUCAST; 100.0% susceptible at ≤ 0.5 mg/L [US FDA]). ESBL-phenotype rates varied from 9.9% (APAC) to 63.0% (E-EU) among KSP and from 17.6% (W-EU) to 57.9% (LATAM) among EC. Ceftaroline was active against non-ESBL-phenotype isolates but generally not active against ESBL-phenotype isolates. Ceftaroline susceptibility among ESP varied from 69.7% (W-EU) to 85.7% (LATAM), 73.6% overall.

Conclusions: Rank order and antimicrobial susceptibility of bacteria isolated from patients hospitalised with CABP varied widely by geographic region. Ceftaroline exhibited potent activity against SA, SPN, HI, and non-ESBL-phenotype *Enterobacteriaceae* isolates.