

P0929 Geographic and temporal variation on the frequency of occurrence and antimicrobial susceptibility of bacteria isolated from patients hospitalised with bacterial pneumonia: results from 20 years of the SENTRY Program (1997-2016)

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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 bacterial pneumonia.

Materials/methods: A total of 104,235 bacterial isolates were consecutively collected (1/patient) in 1997–2016 from 277 medical centres in the Asia-Pacific region (APAC; n=17,746; 86 centres from 13 nations), Europe (n=30,985; 61 centres from 22 nations), Latin America (LATAM; n=10,505; 17 centres from 7 nations), and North America (NA; n=44,999; 113 centres). Organisms were tested for susceptibility by reference broth microdilution methods in a central laboratory.

Results: Overall, *Staphylococcus aureus* (SA; n=24,417) and *Pseudomonas aeruginosa* (PSA; n=22,575) were the top organisms in all regions. SA ranked first in NA and PSA was most common in Europe, APAC, and LATAM. *Klebsiella* spp. (KSP; n=11,337) ranked third in EU, US, and APAC, and fourth in LATAM where *Acinetobacter* spp. ranked third. When comparing 1997–1998 data with 2015–2016 data, the proportion of gram-negatives increased from 70.0–74.7% to 80.9–82.6% in EU, APAC, and LATAM, and remained stable (65.5–66.1%) in the US. Among SA, methicillin resistance rates decreased substantially in all 4 regions from 2005–2006 to 2015–2016, especially in the US (59.6% to 44.0%), Europe (36.4% to 26.4%), and LATAM (50.7% to 34.8%). PSA susceptibility to meropenem decreased overall in the first 10 years of the program, but increased in the last 10 years, especially in LATAM (from 63.4% to 75.2%) and APAC (from 68.3% to 80.3%). Among KSP, susceptibility to ceftriaxone/meropenem decreased from 85.9/99.3% to 58.6/85.9% in Europe, from 91.8/99.5% to 81.6/93.5% in the US, from 67.1/98.6% to 57.1/83.6% in LATAM, and from 80.7/100.0% to 74.9/93.9% in the APAC region during the study period.

Conclusions: Rank order and antimicrobial susceptibility of bacteria isolated from patients hospitalised with pneumonia varied widely by geographic region and over time. The occurrence of some resistance phenotypes increased whereas others decreased over the 20 years of the SENTRY Program.