27th ECCMID Vienna, Austria 22 – 25 April 2017
The congress of ESCMID

Session: P095 Intestinal and intraabdominal infections

**Category: 2d. Abdominal/gastrointestinal, urinary tract & genital infections**

25 April 2017, 12:30 - 13:30
P1993

# Antimicrobial susceptibility profiles of key intra-abdominal (IAI) bacterial isolates from Western Europe: TEST 2014-2016

Daryl Hoban[1], Martha Renteria[1], Daniel Sahm[2], Brian Johnson*[3], Heidi Leister-Tebbe[4]

[1]*International Health Management Associates, Inc.*

[2]*Ihma; Microbiology*

[3]*Ihma, Inc.*

[4]*Pfizer, Inc.*

**Background:** Evolving resistance in gram-negative bacilli commonly found in intra-abdominal infections (IAI) requires careful monitoring importantly on a country specific basis. Surveillance studies are critical in assessing both resistance rates and trends in resistance over time for antimicrobials commonly used to treat IAIs. *Enterobacteriaceae*, *Pseudomonas aeruginosa* and *Acinetobacter baumannii* are common causes of serious infections, particularly among hospitalized patients, and are increasingly difficult to treat, due in part to increased dissemination of extended-spectrum β-lactamases (ESBLs). In this analysis, data from the Tigecycline European Surveillance Trial (TEST) were used to evaluate the *in vitro* activity of several key drugs against recent intra-abdominal isolates from western European countries.

**Material/methods:** A total of 1197 IAI isolates collected from 16 western European countries during 2014-2016 were identified and tested locally using supplied broth micro dilution panels. Susceptibility testing was performed following CLSI guidelines and interpreted using EUCAST clinical breakpoints.

**Results:** The ESBL rates for 356 *E. coli* and 232 *Klebsiella pneumoniae* were 12.1% and 23.3%, respectively. The activities of the various drugs according to organism group are provided in the table below.

| | ***Enterobacteriaceae* (1032)** | | | **ESBL+* (97)** | | | ***P. aeruginosa* (113)** | | | ***A. baumannii* (52)** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Drug** | **%S** | **$MIC_{50}$** | **$MIC_{90}$** | **%S** | **$MIC_{50}$** | **$MIC_{90}$** | **%S** | **$MIC_{50}$** | **$MIC_{90}$** | **%S** | **$MIC_{50}$** | **$MIC_{90}$** |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tigecycline | 94.0 | 0.25 | 1 | 87.6 | 0.5 | 2 | na | 8 | > 8 | na | 1 | 2 |
| Amikacin | 94.4 | 2 | 8 | 93.8 | 4 | 8 | 92.0 | 4 | 8 | 26.9 | > 64 | > 64 |
| Cefepime | 76.8 | ≤ 0.5 | > 32 | 5.2 | > 32 | > 32 | 84.1 | 4 | 16 | na | > 32 | > 32 |
| Ceftazidime | 0 | ≤ 1 | > 16 | 0 | 16 | > 16 | 81.1 | 2 | > 16 | na | > 16 | > 16 |
| Levofloxacin | 78.0 | 0.06 | > 8 | 29.9 | 8 | > 8 | 67.3 | 1 | > 8 | 13.5 | > 8 | > 8 |
| Meropenem | 94.3 | ≤ 0.06 | 0.25 | 89.7 | ≤ 0.06 | 4 | 71.7 | 1 | 16 | 17.3 | > 16 | > 16 |
| Pip -Tazo | 76.6 | 2 | 128 | 55.7 | 8 | > 128 | 76.1 | 4 | 64 | na | > 128 | > 128 |

*_E. coli_ (43), _K. pneumoniae_ (54)
na: no EUCAST breakpoints available

**Conclusions:** Tigecycline, amikacin, and meropenem were the most active agents against _Enterobacteriaceae_ from IAI, with % susceptible ≥94% with only slightly reduced activity against ESBL producers. Amikacin was the most active agent against _P. aeruginosa_ with >90% susceptible. Tigecycline had the lowest $MIC_{90}$ against _A. baumannii_ at 2 mg/L and was 4-64 fold more active based on $MIC_{90}$ than other agents tested. Decreasing antimicrobial susceptibilities and the increasing prevalence of ESBLs in western European countries substantiate the need for continued monitoring of resistance trends among these clinically important organism groups.