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Abstract (publication only)

Evolution of resistance trends among *Klebsiella pneumoniae* and *Escherichia coli* isolates collected from hospitals in Greece; TEST program 2004-2011

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Objectives: The Tigecycline European Surveillance Trial (TEST), a comprehensive surveillance study, allows assessment of trends in antimicrobial activity over time. Such monitoring assists in investigating resistance rates globally, regionally or by country. The current report describes trend analysis of tigecycline and comparator agents against 436 and 397 clinical isolates of *Escherichia coli* (EC) and *Klebsiella pneumoniae* (KP) respectively, collected from Greece during TEST from 2004-2011. Methods: MICs were performed as specified by CLSI at each site using prepared broth microdilution panels and interpreted according to EUCAST guidelines. Differences in ESBL rates and % susceptible (%S) over time were evaluated for statistical significance using the Cochran-Armitage Test. Results: Number of isolates collected (N), % ESBL and %S during the 8 year study period is shown below: *Significant decrease in %S ($p \leq 0.05$) Conclusions: Generally KP had lower %S and higher % ESBL than EC. Furthermore, a statistically significant trend for reduced activity over time was common for antibiotics against KP. While tigecycline maintained excellent susceptibility and activity against EC (although there was a trend for reduced activity over time), tigecycline exhibited more varied susceptibility and activity against *K. pneumoniae* from Greece. Further monitoring in this often difficult to treat organism group is warranted.

| | | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|-------------------------|-----|-------|-------|-------|------|-------|-------|-------|------|
| N | EC | 24 | 18 | 82 | 53 | 55 | 66 | 54 | 84 |
| | KP | 26 | 16 | 67 | 50 | 49 | 80 | 38 | 71 |
| ESBL | EC | 16.7 | 27.8 | 28.0 | 11.3 | 16.4 | 4.5 | 38.9 | 17.9 |
| | KP | 30.8 | 0.0 | 37.3 | 12.0 | 34.7 | 33.8 | 42.1 | 29.6 |
| Amikacin | EC | 100.0 | 94.4 | 82.9 | 90.6 | 98.2 | 86.4 | 85.2 | 94.1 |
| | KP* | 73.1 | 100.0 | 76.1 | 82.0 | 67.4 | 63.8 | 57.9 | 52.1 |
| Cefepime | EC | 83.3 | 72.2 | 72.0 | 83.0 | 85.5 | 81.8 | 57.4 | 76.2 |
| | KP* | 42.3 | 75.0 | 44.8 | 64.0 | 36.7 | 45.0 | 31.6 | 31.0 |
| Ceftriaxone | EC | 83.3 | 77.8 | 69.5 | 83.0 | 83.6 | 84.9 | 55.6 | 72.6 |
| | KP* | 34.6 | 75.0 | 38.8 | 62.0 | 34.7 | 41.3 | 31.6 | 29.6 |
| Levofloxacin | EC* | 75.0 | 72.2 | 84.2 | 64.2 | 70.9 | 74.2 | 53.7 | 67.9 |
| | KP | 23.1 | 75.0 | 47.8 | 60.0 | 32.7 | 55.0 | 44.7 | 29.6 |
| Meropenem | EC | NT | NT | 100.0 | 96.2 | 100.0 | 100.0 | 100.0 | 98.8 |
| | KP* | NT | NT | 55.6 | 84.0 | 65.3 | 66.3 | 63.2 | 43.7 |
| Piperacillin-tazobactam | EC* | 100.0 | 88.9 | 93.9 | 79.3 | 92.7 | 90.9 | 74.1 | 82.1 |
| | KP* | 46.2 | 56.3 | 50.8 | 56.0 | 38.8 | 47.5 | 36.8 | 25.4 |
| Tigecycline | EC* | 100.0 | 100.0 | 100.0 | 98.1 | 100.0 | 100.0 | 88.9 | 97.6 |
| | KP | 73.1 | 100.0 | 83.6 | 88.0 | 67.4 | 88.8 | 68.4 | 85.9 |