|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Supplementary Table 2** Trends of resistance to the indicated agent in selected gram-negative bacteria, 2013–2021 | | | | | | | | | | | |
|  | **Rate (%) of resistance to the indicated agent by year** | | | | | | | | | | |
|  | **2013** | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** | **2021** | **ρ** | **P** |
| *Escherichia coli* |  |  |  |  |  |  |  |  |  |  |  |
| Piperacillin/tazobactam | 1.9 | 2 | 3.8 | 1.8 | 1.8 | 1.1 | 2.5 | 1.9 | 1.9 | -0.15 | 0.7 |
| Cefotaxime | 20.5 | 19.4 | 20.9 | 27.7 | 23.2 | 25.9 | 26.1 | 21.2 | 20.4 | 0.233 | 0.546 |
| Ceftriaxone | – | – | 20 | 27.5 | 22.9 | 25.9 | 26 | – | 0 | -0.2 | 0.704 |
| Ceftazidime | 9.3 | 10.4 | 13.2 | 18.8 | 13.8 | 16.3 | 16.5 | 13.3 | 9.9 | 0.267 | 0.488 |
| Cefepime | 18.1 | 16.9 | 15 | 15.7 | 14.6 | 16.6 | 17.7 | 13 | 9.4 | -0.633 | 0.067 |
| Meropenem | 0 | 0 | 1 | 0.2 | 0.2 | 0.2 | 1 | 0.3 | 0 | 0.187 | 0.631 |
| Imipenem/cilastatin | 0 | 0 | 0.9 | 0 | 0.2 | 0.2 | 0.7 | 0.3 | 0.2 | 0.407 | 0.277 |
| Gentamicin | 9.5 | 9.3 | 10.5 | 9.5 | 9.2 | 10.3 | 11.1 | 9.5 | 8.6 | -0.167 | 0.668 |
| Amikacin | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.9 | 0.3 | 0.3 | 0.3 | 0.583 | 0.099 |
| Levofloxacin | 30.7 | 30.4 | 29.3 | 33.8 | 30.2 | 34.8 | 39 | 31.9 | 32.1 | 0.517 | 0.154 |
| *Klebsiella pneumoniae* |  |  |  |  |  |  |  |  |  |  |  |
| Piperacillin/tazobactam | 1.7 | 0.4 | 3 | 1.8 | 4 | 1.7 | 2.3 | 2.5 | 3.9 | 0.483 | 0.188 |
| Cefotaxime | 7.7 | 6 | 10.6 | 11 | 15.1 | 10.1 | 10.9 | 9.5 | 8.9 | 0.2 | 0.606 |
| Ceftriaxone | – | – | 8.8 | 11 | 15.1 | 10.1 | 10.8 | – | – | 0.2 | 0.747 |
| Ceftazidime | 1.7 | 2.1 | 5.7 | 4 | 10.4 | 7.1 | 8.5 | 6.6 | 7.4 | 0.733 | **0.025\*** |
| Cefepime | 6 | 4.3 | 5.7 | 6.3 | 10.8 | 6.4 | 8.1 | 7.1 | 6.6 | 0.717 | **0.03\*** |
| Meropenem | 0 | 0 | 1.1 | 0 | 0.4 | 0.3 | 0 | 0.8 | 1.2 | 0.54 | 0.134 |
| Imipenem/cilastatin | 0 | 0 | 1.1 | 0 | 0.4 | 0.3 | 0 | 0.8 | 1.2 | 0.54 | 0.134 |
| Gentamicin | 4.3 | 3.8 | 4.6 | 4.8 | 4.8 | 6.1 | 7.8 | 5.4 | 2.7 | 0.333 | 0.381 |
| Amikacin | 0 | 0 | 0.4 | 0 | 0 | 0.7 | 0.4 | 0.4 | 0 | 0.42 | 0.261 |
| Levofloxacin | 4.7 | 2.6 | 3 | 1.8 | 6 | 6.4 | 7.8 | 5.8 | 5 | 0.583 | 0.099 |
| *Proteus mirabilis* |  |  |  |  |  |  |  |  |  |  |  |
| Piperacillin/tazobactam | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | – | – |
| Cefotaxime | 12 | 0 | 9.1 | 2.7 | 10.3 | 8.8 | 4.5 | 0 | 6.1 | -0.318 | 0.404 |
| Ceftriaxone | – | – | 9.1 | 2.7 | 10.3 | 8.8 | 4.8 | – | – | -0.2 | 0.747 |
| Ceftazidime | 0 | 0 | 0 | 0 | 0 | 2.9 | 0 | 0 | 0 | 0.137 | 0.725 |
| Cefepime | 12 | 0 | 9.1 | 2.7 | 6.9 | 8.8 | 4.5 | 0 | 3 | -0.368 | 0.33 |
| Meropenem | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | – | – |
| Imipenem/cilastatin | 4 | 0 | – | – | – | – | – | – | – | – | – |
| Gentamicin | 4 | 0 | 4.5 | 2.7 | 3.4 | 0 | 4.5 | 2.9 | 6.1 | 0.303 | 0.429 |
| Amikacin | 0 | 0 | 0 | 0 | 0 | 2.9 | 0 | 0 | 0 | 0.137 | 0.725 |
| Levofloxacin | 0 | 4.5 | 0 | 2.7 | 0 | 0 | 9.1 | 5.9 | 3 | 0.479 | 0.192 |
| *Serratia marcescens* |  |  |  |  |  |  |  |  |  |  |  |
| Piperacillin/tazobactam | 16.7 | 4.7 | 1.8 | 1.7 | 4.7 | 4.1 | 1.7 | 0 | 0 | -0.819 | **0.007\*\*** |
| Cefotaxime | 35 | 12.5 | – | – | – | – | – | – | – | – | – |
| Ceftriaxone | – | – | 18.2 | 12.1 | 14.3 | 12.3 | 15.8 | – | – | -0.1 | 0.873 |
| Ceftazidime | 31.7 | 7.8 | 9.1 | 1.7 | 6.3 | 9.6 | 3.4 | 0 | 0 | -0.745 | **0.021\*** |
| Cefepime | 0 | 0 | 0 | 0 | 1.6 | 0 | 0 | 0 | 0 | 0 | 1 |
| Meropenem | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | – | – |
| Imipenem/cilastatin | 0 | 0 | 0 | 0 | 0 | 0 | 0 | – | – | – | – |
| Gentamicin | 0 | 1.6 | 0 | 0 | 1.6 | 0 | 0 | 0 | 0 | -0.311 | 0.416 |
| Amikacin | 0 | 0 | 0 | 0 | 1.6 | 0 | 0 | 0 | 0 | 0 | 1 |
| Levofloxacin | 0 | 1.6 | 1.8 | 3.4 | 0 | 2.7 | 0 | 0 | 1.3 | -0.183 | 0.638 |
| *Enterobacter cloacae* |  |  |  |  |  |  |  |  |  |  |  |
| Piperacillin/tazobactam | 14.5 | 12.4 | 16.5 | 13.4 | 10.1 | 15.2 | 14.5 | 13.6 | 17.6 | 0.267 | 0.488 |
| Cefotaxime | 22.8 | 24.1 | 34.1 | 36.2 | 24.5 | 35.4 | 32.2 | 29.3 | 41.2 | 0.583 | 0.099 |
| Ceftriaxone | – | – | 31.9 | 38.9 | 25.2 | 35.6 | 32.2 | – | – | 0.1 | 0.873 |
| Ceftazidime | 20.7 | 24.1 | 28.7 | 29.5 | 21.4 | 27.5 | 23 | 23.1 | 35.2 | 0.317 | 0.406 |
| Cefepime | 3.4 | 2.2 | 5.5 | 2 | 2.5 | 1.7 | 1.3 | 1.4 | 0.6 | -0.867 | **0.003\*\*** |
| Meropenem | 0.7 | 0 | 0.6 | 0.7 | 1.9 | 1.1 | 0 | 0 | 1.2 | 0.102 | 0.795 |
| Imipenem/cilastatin | 0.7 | 0 | 0.6 | 1.3 | 1.9 | 1.7 | 2 | 4.1 | 1.8 | 0.817 | **0.007\*\*** |
| Gentamicin | 0.7 | 0 | 0.6 | 0.7 | 0.6 | 0 | 0 | 0 | 0 | -0.639 | 0.064 |
| Amikacin | 0 | 0 | 0 | 0 | 0 | 0 | 0.7 | 0 | 0 | 0.274 | 0.476 |
| Levofloxacin | 3.4 | 2.9 | 2.4 | 4 | 4.4 | 3.9 | 2.6 | 0.7 | 0.6 | -0.467 | 0.205 |
| *Pseudomonas aeruginosa* |  |  |  |  |  |  |  |  |  |  |  |
| Piperacillin/tazobactam | 2.3 | 3.1 | 4.8 | 10.1 | 9.5 | 14.4 | 11.4 | 11.3 | 5.1 | 0.667 | 0.05 |
| Ceftazidime | 10.2 | 9 | 4.8 | 13.7 | 10 | 12.9 | 11 | 9.8 | 5.6 | -0.033 | 0.932 |
| Cefepime | 10.2 | 13.3 | 7.8 | 17.6 | 11.5 | 11.9 | 13.1 | 11.3 | 6.5 | -0.217 | 0.576 |
| Meropenem | 10.5 | 10.2 | 16 | 18.5 | 15 | 13.9 | 14.8 | 10.8 | 10.7 | 0.083 | 0.831 |
| Imipenem/cilastatin | 16.8 | 14.5 | 22.1 | 24.2 | 16 | 17.8 | 21.5 | 20.1 | 18.7 | 0.267 | 0.488 |
| Gentamicin | 16 | 16.8 | 17.3 | 13.2 | 14.5 | 17.8 | 19 | 14.7 | 9.3 | -0.2 | 0.606 |
| Amikacin | 3.1 | 3.9 | 3.9 | 2.2 | 3.5 | 3 | 5.9 | 3.9 | 2.3 | 0.05 | 0.898 |
| Levofloxacin | 11.7 | 21.1 | 11.7 | 16.3 | 13 | 14.9 | 13.9 | 13.2 | 12.1 | 0.017 | 0.966 |
| *Acinetobacter baumannii* |  |  |  |  |  |  |  |  |  |  |  |
| Piperacillin/tazobactam | – | – | – | – | – | – | – | – | – | – | – |
| Ceftazidime | 6.2 | 7 | 4.5 | 3.7 | 0 | 1.8 | 5.7 | 4 | 6.1 | -0.3 | 0.433 |
| Cefepime | 7.7 | 11.3 | 9.1 | 7.4 | 5.9 | 3.6 | 14.3 | 4 | 6.1 | -0.433 | 0.244 |
| Meropenem | 4.6 | 4.2 | 0 | 1.9 | 0 | 0 | 0 | 0 | 0 | -0.772 | **0.015\*** |
| Imipenem/cilastatin | 12.5 | 100 | – | 100 | – | – | – | 0 | 0 | -0.633 | 0.252 |
| Gentamicin | 10.8 | 8.5 | 4.5 | 9.3 | 8.8 | 12.5 | 11.4 | 0 | 6.3 | -0.167 | 0.668 |
| Amikacin | 6.2 | 5.6 | 2.3 | 0 | 0 | 0 | 5.7 | 0 | 0 | -0.584 | 0.099 |
| Levofloxacin | 6.2 | 7 | 0 | 16.7 | 0 | 0 | 5.7 | 0 | 6.3 | -0.244 | 0.527 |
| ρ indicates Spearman’s correlation coefficient.  P values marked in bold are < 0.05.  \* and \*\* indicate statistically significant correlations (P < 0.05 and P < 0.01, respectively). | | | | | | | | | | | |