|  |
| --- |
| **Table, Supplemental Table, Supplemental Digital Content 5. Non-susceptibility rates of bacteria to antibiotics** |
| **Study** | **Year of conduction** | ***S. pneumoniae*** | ***H. influenzae*** | ***S. aureus*** | ***P. aeruginosa*** | ***S. pyogenes*** | ***M. catharralis*** |
|   |  | n | % | 95% CI | n | *%* | 95% CI | n | *%* | 95% CI | n | % | 95% CI | n | % | 95% CI | n | % | 95% CI |
| **Non-susceptible to penicillin** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Naziat 2018 | 2014-2015 | 1 / 164 | 0.60 | 0.0-3.0 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| Ling ding 2017 | 2013-2015 | ­ | ­ | ­ | ­ | ­ | ­ | 33 / 37 | 89.2 | 75.9-96.5 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| Cilveti | 2011-2014 | 18 / 280 | 6.5 | 4.0-9.8 | ­ | ­ | ­ |  |  |  |  |  |  |  |  |  |  |  |  |
| Ding 2015 | 2011-2013 | 59 / 108 | 54.6 | 45.2 - 63.8 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| Lee 2014 | 2001-2010 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | 1 / 1  | 100.0 | 20.7-100.0 | ­ | ­ | ­ | ­ | ­ | ­ |
| Setchanova 2013-2 | 2006-2011 | 52 / 79 | 65.8 | 54.9-75.6 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| Marchisio 2013-3a | 2008-2011 | 1 / 50 | 2.0 | 1.0-9.5 | 0 / 143 | 0.0 | 0.0-2.1 | 5 / 17 | 29.4 | 11.7-53.7 | ­ | ­ | ­ | 1 / 49 | 2.0 | 0.1-9.7 | 0 / 4 | 0.0 | 0.0-52.7 |
| Marchisio 2013-2a | 2005-2007 | 0 / 19 | 0.0 | 0-14.6 | 0 / 35 | 0.0 | 0.0-8.2 | 1 / 4 | 25.0 | 1.3-75.8 | ­ | ­ | ­ | 0 / 14 | 0.0 | 0.0-19.3 | ­ | ­ | ­ |
| Marchisio 2013-1a | 2001-2004 | 0 / 22 | 0.0 | 0-12.7 | 1 / 42 | 2.4 | 0.1-11.2 | 1 / 12 | 8.3 | 0.4-34.7 | ­ | ­ | ­ | 0 / 20 | 0.0 | 0.0-13.9 | 0 / 1 | 0.0 | 0.0-79.3 |
| Grevers 2012 | 2008-2010 | 1 / 10 | 10.0 | 0.5-40.3 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| Stamboulidis 2011-2 | 2005-2008 | 144 / 329 | 43.8 | 38.5-49.2 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| Stamboulidis 2011-1 | 2000-2008 | 296 / 647 | 45.7 | 41.9-49.6 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| Brook 2009 | 2001-2006 | 6 / 22 | 27.3 | 11.9-48.3 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| **Non-susceptible amoxicillin** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Ding 2015 | 2011-2013 | 70 / 108 | 64.8 | 55.5-73.4 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| Setchanova 2013-2 | 2006-2011 | 10 / 79 | 12.7 | 6.6-21.4 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| Grevers 2012 | 2008-2010 | 0 / 10 | 0.0 | 0.0-25.9 | 2 / 21 | 9.5 | 1.6-28.1 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| Junejo 2011 | 2007-2009 | 13 / 63 | 20.6 | 12.0-31.9 | 17 / 22 | 77.3 | 56.6-91.2 | 96 / 114 | 84.2 | 76.6 - 90.1 | 7 / 7 | 100.0 | 65.2-100.0 | 7 / 19 | 36.8 | 17.8-59.7 | ­ | ­ | ­ |
| **Non-susceptible to amoxicillin-clavulanic acid** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Cilveti | 2011-2014 | ­ | ­ | ­ | 10 / 264 | 3.8 | 1.9-6.6 |  |  |  |  |  |  |  |  |  |  |  |  |
| Sonsuwan 2016 | 2007-2008 | ­ | ­ | ­ | 0 / 19 | 0.0 | 0.0-14.6 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| **Non-susceptible to trimethoprim/sulfamethoxazole** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Naziat 2018 | 2014-2015 | 126 / 164 | 76.8 | 69.9-82.8 | 76 / 187 | 40.6 | 33.8-47.8 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| Ling ding 2017 | 2013-2015 | ­ | ­ | ­ | ­ | ­ | ­ | 1 / 37 | 2.7 | 0.0-12.6 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| Ding 2015 | 2011-2013 | 101 / 108 | 93.5 | 87.6 - 97.1 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| Sonsuwan 2016 | 2007-2008 | ­ | ­ | ­ | 10 / 19 | 52.6 | 30.6-73.9 | 1 / 14 | 7.1 | 0.4-30.5 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| Lee 2014 | 2001-2010 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | 0 / 2 | 0.0 | 0.0-77.6 | ­ | ­ |  | ­ | ­ | ­ |
| Setchanova 2013-2 | 2006-2011 | 51 / 79 | 64.6 | 53.6-74.5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Marchisio 2013-3a | 2008-2011 | 3 / 50 | 6.0 | 1.5-15.5 | 11 / 143 | 7.7 | 4.1-13.0 | 1 / 17 | 5.9 | 0.3-25.8 | ­ | ­ | ­ | 3 / 49 | 6.1 | 1.6-15.8 | 0 / 4 | 0.0 | 0.0-52.7 |
| Marchisio 2013-2a | 2005-2007 | 0 / 19 | 0.0 | 0.0-14.6 | 0 / 35 | 0.0 | 0.0-8.2 | 0 / 4 | 0.0 | 0.0-52.7 | ­ | ­ | ­ | 0 / 14 | 0.0 | 0.0-19.3 | ­ | ­ | ­ |
| Marchisio 2013-1a | 2001-2004 | 6 / 22 | 27.3 | 11.9-48.3 | 3 / 42 | 7.1 | 1.8-18.2 | 0 / 12 | 0.0 | 0.0-22.1 | ­ | ­ | ­ | 2 / 20 | 10.0 | 1.7-29.3 | 0 / 1 | 0.0 | 0.0-79.3 |
| Grevers 2012 | 2008-2010 | 0 / 10 | 0.0 | 0.0-25.9 | 7 / 21c | 33.3 | 15.9-55.1 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| **Non-susceptible to erythromycin** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Naziat 2018 | 2014-2015 | 95 / 164 | 57.9 | 50.3-65.3 | 172/187 | 92.0 | 87.4-95.3 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| Ling ding 2017 | 2013-2015 | ­ | ­ | ­ | ­ | ­ | ­ | 23 / 37 | 62 | 45.9-76.6 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| Cilveti | 2011-2014 | 102 / 280 | 36.5 | 30.9-42.2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Ding 2015 | 2011-2013 | 107 / 108 | 99.1 | 95.6-100.0 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| Sonsuwan 2016 | 2007-2008 | ­ | ­ | ­ | ­ | ­ | ­ | 3 / 14 | 21.4 | 5.8-48.0 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| Lee 2014 | 2001-2010 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | 1 | 100.0 | 71.7-100.0 | ­ | ­ | ­ | ­ | ­ | ­ |
| Setchanova 2013-2 | 2006-2011 | 42 / 79 | 53.2 | 42.1-64.0 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Marchisio 2013-3a | 2008-2011 | 14 / 50 | 28.0 | 16.9-41.6 | 3 / 143 | 2.1 | 0.5-5.6 | 5 / 17 | 29.4 | 11.7-53.7 | ­ | ­ | ­ | 7 / 49 | 14.3 | 6.5-26.2 | 0 / 4 | 0.0 | 0.0-52.7 |
| Marchisio 2013-2a | 2005-2007 | 2 / 19 | 10.5 | 1.8-30.6 | 0 / 35 | 0.0 | 0.0-8.2 | 1 / 4 | 25.0 | 1.3-75.8 | ­ | ­ | ­ | 1 / 14 | 7.1 | 0.4-30.5 | ­ | ­ |  |
| Marchisio 2013-1a | 2001-2004 | 5 / 22 | 22.7 | 8.8-43.4 | 4 / 42 | 9.5 | 3.1-21.4 | 1 / 12 | 8.3 | 0.4-34.7 | ­ | ­ | ­ | 4 / 20 | 20.0 | 6.7-41.5 | 0 / 1 | 0.0 | 0.0-79.3 |
| Stamboulidis 2011-2c | 2005-2008 | 115 / 329 | 35.0 | 29.9-40.2 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| Stamboulidis 2011-1c | 2000-2008 | 268 / 614 | 43.6 | 39.8-47.6 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| **Non-susceptible to cephalosporin** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Cilveti | 2011-2014 | 15 / 280 | 5.4 | 3.1-8.5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Ding 2015 | 2011-2013 | 68 / 108 | 63.0 | 53.6 - 71.7 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| Sonsuwan 2016 | 2007-2008 | ­ | ­ | ­ | 0 / 19 | 0.0 | 0.0-14.6 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| Lee 2014 | 2001-2010 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | 1 / 8 | 12.5 | 0.6-48.0 | ­ | ­ | ­ | ­ | ­ | ­ |
| Setchanova 2013-2b | 2006-2011 | 7 / 79 | 8.9 | 4.0-16.7 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Marchisio 2013-3a | 2008-2011 | 0 / 50 | 0.0 | 0.0-5.8 | 2 / 143 | 1.4 | 0.2-4.5 | 3 / 17 | 17.6 | 4.7-40.9 | ­ | ­ | ­ | 0 / 49 | 0.0 | 0.0-5.9 | 0 / 4 | 0.0 | 0.0-52.7 |
| Marchisio 2013-2a | 2005-2007 | 0 / 19 | 0.0 | 0.0-14.6 | 0 / 35 | 0.0 | 0.0-8.2 | 1 / 4 | 25.0 | 1.3-75.8 | ­ | ­ | ­ | 0 / 14 | 0.0 | 0.0-19.3 | ­ | ­ | ­ |
| Marchisio 2013-1a | 2001-2004 | 0 / 22 | 0.0 | 0.0-12.7 | 0 / 42 | 0.0 | 0.0-6.9 | 1 / 12 | 8.3 | 0.4-34.7 | ­ | ­ | ­ | 0 / 20 | 0.0 | 0.0-13.9 | 0 / 1 | 0.0 | 0.0-79.3 |
| Junejo 2011b | 2007-2009 | 36 / 63 | 57.1 | 44.7-68.9 | 2 / 22 | 9.1 | 1.6-26.9 | 90 / 114 | 78.9 | 70.7-85.7 | 4 / 7  | 57.1 | 21.6-87.7 | 9 / 19 | 47.4 | 26.1-69.3 | ­ | ­ | ­ |
| Stamboulidis 2011-3 | 2005-2008 | 36 / 329 | 10.9 | 7.9-14.7 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| Stamboulidis 2011-1 | 2000-2008 | 22 / 647 | 3.4 | 2.2-5.0 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| **Non-susceptible to quinolones** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Naziat 2018 | 2014-2015 | 9 / 164 | 5.5 | 2.7-9.8 | 0 / 187 | 0.0 | 0.0-1.6 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| Ling ding 2017 | 2013-2015 | ­ | ­ | ­ | ­ | ­ | ­ | 0 / 37 | 0.0 | 0.0-9.4 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| Ding 2015 | 2011-2013 | 1 / 108 | 0.9 | 0.0 - 4.5 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| Sonsuwan 2016 | 2007-2008 | ­ | ­ | ­ | 0 / 19 | 0.0 | 0.0-14.6 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| Setchanova 2013-2 | 2006-2011 | 0 / 79 | 0.0 | 0.0-3.7 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Junejo 2011 | 2007-2009 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | 2 / 7  | 28.6 | 5.1-67.0 | ­ | ­ | ­ | ­ | ­ | ­ |
| **Non-susceptible to ampicillin** |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sonsuwan 2016 | 2007-2008 | ­ | ­ | ­ | 5 / 19 | 26.3 | 10.3-49.0 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| Marchisio 2013-3a | 2008-2011 | 1 / 50 | 2.0 | 0.1-9.5 | 23 / 143 | 16.1 | 10.7-23.0 | 13 / 17 | 76.5 | 52.5-92.0 | ­ | ­ | ­ | 0 / 49 | 0.0 | 0-5.9 | 4 / 4 | 100.0 | 47.3-100.0 |
| Marchisio 2013-2a | 2005-2007 | 1 / 19 | 5.2 | 0.3-23.3 | 2 / 35 | 5.7 | 1.0-17.6 | 2 / 4 | 50.0 | 9.4-90.6 | ­ | ­ | ­ | 0 / 14 | 0.0 | 0.0-19.3 | 0 / 0 | 0.0 | 0.0-79.3 |
| Marchisio 2013-1a | 2001-2004 | 0 / 22 | 0.0 | 0.0-12.7 | 1 / 42 | 2.4 | 0.1-11.2 | 7 / 12 | 58.3 | 30.2-82.8 | ­ | ­ | ­ | 0 / 20 | 0.0 | 0.0-13.9 | 1 / 1 | 100.0 | 20.7-100.0 |
| Grevers 2012 | 2008-2010 | 0 / 10 | 0.0 | 0.0-25.9 | 4 / 21 | 19.0 | 6.4-39.8 | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ | ­ |
| a Marchisio only reported resistance data  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| b Setchanova and Grevers reported data of several cephalosporins; we extracted their data of ceftriaxone.  |  |  |  |  |  |  |  |  |  |  |  |
| c Grevers reported for H. Influenzae and Stamboulidis reported for erythromycin only resistance data and no intermediate or sensitive data. |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |