Supplementary Material

**Molecular epidemiology and clinical characteristics of the type VI secretion system in *Klebsiella pneumoniae* causing abscesses**

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# Supplementary Data

Table Primers used in this study.

|  |  |  |
| --- | --- | --- |
| Primer name | DNA sequence(5’-3’) | Amplicon size (bp) |
| T6SS genes |
| *hcp* | F: TCCCGACCGATAACAACACC | 242 |
|  | R: GATGTCGTGCATCAGGGGAT |  |
| *vgrG* | F: TGAGCGTGTTTGTGCGAAAG | 259 |
|  | R: TGACGCCCGTAATATCCTGC |  |
| *icmF* | F: GACCGCTTACGGACAACTGA | 485 |
|  | R: CACTCAGCACCCAGTCCATT |  |
| Capsular serotypes |
| K1 | F: GGTGCTCTTTACATCATTGC | 1283 |
| R: GCAATGGCCATTTGCGTTAG |
| K2 | F: GACCCGATATTCATACTTGACAGAG | 641 |
| R: CCTGAAGTAAAATCGTAAATAGATGGC |
| K5 | F: TGGTAGTGATGCTCGCGA | 741 |
| R: CCTGAACCCACCCCAATC |
| K20 | F: CGGTGCTACAGTGCATCATT | 280 |
| R: GTTATACGATGCTCAGTCGC |
| K54 | F: CATTAGCTCAGTGGTTGGCT | 881 |
| R: GCTTGACAAACACCATAGCAG |
| K57 | F: CTCAGGGCTAGAAGTGTCAT | 1037 |
| R: CACTAACCCAGAAAGTCGAG |
| wzi | F:GTGCCGCGAGCGCTTTCTATCTTGGTATTCC | 831 |
| R;GAGAGCCACTGGTTCCAGAACTTGACCGC |  |
| Virulence genes |
| *p-rmpA*  | F:ACTGGGCTACCTCTGCTTCA | 535 |
|  | R:CTTGCATGAGCCATCTTTCA |  |
| *p-rmpA2* | F:GTGCAATAAGGATGTTACATTA | 430 |
|  | R:GGATGCCCTCCTCCTG |  |
| *Aerobactin* | F:GCATAGGCGGATACGAACAT | 556 |
|  | R:CACAGGGCAATTGCTTACCT |  |
| *iroB* | F:ATCTCATCATCTACCCTCCGCTC | 235 |
|  | R:GGTTCGCCGTCGTTTTCAA |  |
| *Peg-344* | F:CTTGAAACTATCCCTCCAGTC | 508 |
|  | R:CCAGCGAAAGAATAACCCC |  |
| *mrkD* | F:AAGCTATCGCTGTACTTCCGGCA | 340 |
|  | R:GGCGTTGGCGCTCAGATAGG |  |
| *wcaG* | F:GGTTGGKTCAGCAATCGTA | 169 |
|  | R:ACTATTCCGCCAACTTTTGC |  |
| *ybtS* | F:GACGGAAACAGCACGGTAAA | 242 |
|  | R:GAGCATAATAAGGCGAAAGA |  |
| *alls* | F:CATTACGCACCTTTGTCAGC | 764 |
|  | R:GAATGTGTCGGCGATCAGCTT |  |
| *kfu* | F:GGCCTTTGTCCAGAGCTACG | 638 |
|  | R:GGGTCTGGCGCAGAGTATGC |  |
| *entB* | F:GTCAACTGGGCCTTTGAGCCGTC | 400 |
|  | R:TATGGGCGTAAACGCCGGTGAT |  |
| *iutA* | F:GGGAAAGGCTTCTCTGCCAT | 920 |
|  | R;TTATTCGCCACCACGCTCTT |  |
| Drug-resistant genes |
| *NDM-1* | F: GGGCAGTCGCTTCCAACGGT | 435 |
|  | R: GTAGTGCTCAGTGTCGGCAT |  |
| *OXA-48* | F: GCTTGATCGCCCTCGATT | 281 |
|  | R: GATTTGCTCCGTGGCCGAAA |  |
| *TEM* | F:AGTGCTGCCATAACCATGAGTG | 431 |
|  | R:CTGACTCCCCGTCGTGTAGATA |  |
| *KPC* | F: GCTACACCTAGCTCCACCTTC | 920 |
|  | R: ACAGTGGTTGGTAATCCATGC |  |
| *KPC-2* | F: CATTCAAGGGCTTTCTTGCTGC | 538 |
|  | R: ACGACGGCATAGTCATTTGC |  |
| *CTX-M* | F:TTGAGGCTGGGTGAAGT | 759 |
|  | R:ACGCTGTTGTTAGGAAGTG |  |
| *IMP* | F:TTGACACTCCATTTACTGCTA | 172 |
|  | R:TCATTTGTTAATTCAGATGCATA |  |
| *VIM* | F:GAGTTGCTTTTGATTGATACAG | 247 |
|  | R:TCGATGAGAGTCCTTCTAGA |  |
| *SHV* | F:GCCTTTATCGGCCTTCACTCAAG | 898 |
|  | R:TTAGCGTTGCCAGTGCTCGATCA |  |

Table . Antimicrobial resistance of K1-positive and K1-negative *K. pneumoniae* isolates causing abscesses

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Antimicrobial agent** | **ALL*****N=169 (%)*** | **K1-negative** ***N=125 (%)*** | **K1-positive*****N=44 (%)*** | **p.overall** |
| Ampicillin | 169 (100.00) | 125 (100.00) | 44 (100.00) | 1.000  |
| Piperacillin/ Tazobactam |  33 (19.53)  |  33 (26.40)  |  0 (0.00)  |  **<0.001**  |
| Ampicillin/Sulbactam |  56 (33.14)  |  49 (39.20)  |  7 (15.91)  |  **0.013**  |
| Cefoperazone/Sulbactam |  34 (20.12)  |  34 (27.20)  |  0 (0.00)  |  **<0.001**  |
| Cefazolin |  61 (36.09)  |  53 (42.40)  |  8 (18.18)  |  **0.011**  |
| Cefuroxime |  58 (34.32)  |  51 (40.80)  |  7 (15.91)  |  **0.009**  |
| Cefatriaxone |  57 (33.73)  |  51 (40.80)  |  6 (13.64)  |  **0.001**  |
| Cefepime |  38 (22.49)  |  37 (29.60)  |  1 (2.27)  |  **<0.001**  |
| Cefotetan |  39 (23.08)  |  37 (29.60)  |  2 (4.55)  |  **0.001**  |
| Amtreonam |  49 (28.99)  |  45 (36.00)  |  4 (9.09)  |  **0.001**  |
| Ertapenem |  30 (17.75)  |  30 (24.00)  |  0 (0.00)  |  **<0.001**  |
| Meropenem |  31 (18.34)  |  31 (24.80)  |  0 (0.00)  |  **<0.001**  |
| Imipenem |  31 (18.34)  |  31 (24.80)  |  0 (0.00)  |  **<0.001**  |
| Gentamicin |  30 (17.75)  |  29 (23.20)  |  1 (2.27)  |  **0.001**  |
| Amikacin |  21 (12.43)  |  21 (16.80)  |  0 (0.00)  |  **0.002**  |
| Tobramycin |  26 (15.38)  |  24 (19.20)  |  2 (4.55)  |  **0.002**  |
| Levofloxacin |  40 (23.67)  |  39 (31.20)  |  1 (2.27)  |  **<0.001**  |
| Ciprofloxacin |  55 (32.54)  |  51 (40.80)  |  4 (9.09)  |  **<0.001**  |
| Sulfamethoxazole |  43 (25.44)  |  39 (31.20)  |  4 (9.09)  |  **0.004**  |
| Tigecycline |  3 (1.78)  |  3 (2.40)  |  0 (0.00)  |  0.059  |

P<0.05 was considered to be statistically significant.

Table . Antimicrobial resistance of K2-positive and K2-negative *K. pneumoniae* isolates causing abscesses

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Antimicrobial agent** | **ALL*****N=169 (%)*** | **K2-negative** ***N=133(%)*** | **K2-positive*****N=36 (%)*** | **p.overall** |
| Ampicillin | 169 (100.00) | 133 (100.00) | 36 (100.00) | 1.000  |
| Piperacillin/ Tazobactam |  33 (19.53)  |  32 (24.06)  |  1 (2.78)  |  **0.007**  |
| Ampicillin/Sulbactam |  56 (33.14)  |  52 (39.10)  |  4 (11.11)  |  **0.001**  |
| Cefoperazone/Sulbactam |  34 (20.12)  |  31 (23.31)  |  3 (8.33)  |  0.160  |
| Cefazolin |  61 (36.09)  |  58 (43.61)  |  3 (8.33)  |  **<0.001**  |
| Cefuroxime |  58 (34.32)  |  54 (40.60)  |  4 (11.11)  |  **<0.001**  |
| Cefatriaxone |  57 (33.73)  |  52 (39.10)  |  5 (13.89)  |  **0.008**  |
| Cefepime |  38 (22.49)  |  34 (25.56)  |  4 (11.11)  |  0.176  |
| Cefotetan |  39 (23.08)  |  36 (27.07)  |  3 (8.33)  |  **0.035**  |
| Amtreonam |  49 (28.99)  |  46 (34.59)  |  3 (8.33)  |  **0.002**  |
| Ertapenem |  30 (17.75)  |  29 (21.80)  |  1 (2.78)  |  **0.006**  |
| Meropenem |  31 (18.34)  |  29 (21.80)  |  2 (5.56)  |  0.052  |
| Imipenem |  31 (18.34)  |  29 (21.80)  |  2 (5.56)  |  0.052  |
| Gentamicin |  30 (17.75)  |  27 (20.30)  |  3 (8.33)  |  0.281  |
| Amikacin |  21 (12.43)  |  19 (14.29)  |  2 (5.56)  |  0.413  |
| Tobramycin |  26 (15.38)  |  24 (18.05)  |  2 (5.56)  |  0.237  |
| Levofloxacin |  40 (23.67)  |  37 (27.82)  |  3 (8.33)  |  **0.021**  |
| Ciprofloxacin |  55 (32.54)  |  50 (37.59)  |  5 (13.89)  |  **0.016**  |
| Sulfamethoxazole |  43 (25.44)  |  39 (29.32)  |  4 (11.11)  |  0.051  |
| Tigecycline |  3 (1.78)  |  3 (2.26)  |  0 (0.00)  |  0.390  |

P<0.05 was considered to be statistically significant.

Table . Antimicrobial resistance of K5-positive and K5-negative *K. pneumoniae* isolates causing abscesses

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Antimicrobial agent** | **ALL*****N=169 (%)*** | **K5-negative** ***N=167(%)*** | **K5-positive*****N=2(%)*** | **p.overall** |
| Ampicillin | 169 (100.00) | 167 (100.00) | 2 (100.00) |  1.000  |
| Piperacillin/ Tazobactam |  33 (19.53)  |  33 (19.76)  |  0 (0.00)  |  1.000  |
| Ampicillin/Sulbactam |  56 (33.14)  |  56 (33.53)  |  0 (0.00)  |  0.594  |
| Cefoperazone/Sulbactam |  34 (20.12)  |  34 (20.36)  |  0 (0.00)  |  1.000  |
| Cefazolin |  61 (36.09)  |  61 (36.53)  |  0 (0.00)  |  0.592  |
| Cefuroxime |  58 (34.32)  |  58 (34.73)  |  0 (0.00)  |  0.223  |
| Cefatriaxone |  57 (33.73)  |  57 (34.13)  |  0 (0.00)  |  0.558  |
| Cefepime |  38 (22.49)  |  38 (22.75)  |  0 (0.00)  |  1.000  |
| Cefotetan |  39 (23.08)  |  39 (23.35)  |  0 (0.00)  |  1.000  |
| Amtreonam |  49 (28.99)  |  49 (29.34)  |  0 (0.00)  |  1.000  |
| Ertapenem |  30 (17.75)  |  30 (17.96)  |  0 (0.00)  |  1.000  |
| Meropenem |  31 (18.34)  |  31 (18.56)  |  0 (0.00)  |  1.000  |
| Imipenem |  31 (18.34)  |  31 (18.56)  |  0 (0.00)  |  1.000  |
| Gentamicin |  30 (17.75)  |  30 (17.96)  |  0 (0.00)  |  1.000  |
| Amikacin |  21 (12.43)  |  21 (12.57)  |  0 (0.00)  |  1.000  |
| Tobramycin |  26 (15.38)  |  26 (15.57)  |  0 (0.00)  |  1.000  |
| Levofloxacin |  40 (23.67)  |  40 (23.95)  |  0 (0.00)  |  1.000  |
| Ciprofloxacin |  55 (32.54)  |  55 (32.93)  |  0 (0.00)  |  0.585  |
| Sulfamethoxazole |  43 (25.44)  |  42 (25.15)  | 1 (50.00)  |  0.454  |
| Tigecycline |  3 (1.78)  |  3 (1.80)  |  0 (0.00)  |  0.275  |

Table . Antimicrobial resistance of K20-positive and K20-negative *K. pneumoniae* isolates causing abscesses

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Antimicrobial agent** | **ALL*****N=169 (%)*** | **K20-negative** ***N=166(%)*** | **K20-positive*****N=3(%)*** | **p.overall** |
| Ampicillin | 169 (100.00) | 166 (100.00) | 3 (100.00) |  1.000  |
| Piperacillin/ Tazobactam |  33 (19.53)  |  33 (19.88)  |  0 (0.00)  |  1.000  |
| Ampicillin/Sulbactam |  56 (33.14)  |  56 (33.73)  |  0 (0.00)  |  0.628  |
| Cefoperazone/Sulbactam |  34 (20.12)  |  34 (20.48)  |  0 (0.00)  |  1.000  |
| Cefazolin |  61 (36.09)  |  61 (36.75)  |  0 (0.00)  |  0.435  |
| Cefuroxime |  58 (34.32)  |  58 (34.94)  |  0 (0.00)  |  0.509  |
| Cefatriaxone |  57 (33.73)  |  57 (34.34)  |  0 (0.00)  |  0.568  |
| Cefepime |  38 (22.49)  |  38 (22.89)  |  0 (0.00)  |  1.000  |
| Cefotetan |  39 (23.08)  |  39 (23.49)  |  0 (0.00)  |  0.682  |
| Amtreonam |  49 (28.99)  |  49 (29.52)  |  0 (0.00)  |  0.572  |
| Ertapenem |  30 (17.75)  |  30 (18.07)  |  0 (0.00)  |  1.000  |
| Meropenem |  31 (18.34)  |  31 (18.67)  |  0 (0.00)  |  1.000  |
| Imipenem |  31 (18.34)  |  31 (18.67)  |  0 (0.00)  |  1.000  |
| Gentamicin |  30 (17.75)  |  30 (18.07)  |  0 (0.00)  |  1.000  |
| Amikacin |  21 (12.43)  |  21 (12.65)  |  0 (0.00)  |  1.000  |
| Tobramycin |  26 (15.38)  |  26 (15.66)  |  0 (0.00)  |  1.000  |
| Levofloxacin |  40 (23.67)  |  40 (24.10)  |  0 (0.00)  |  0.657  |
| Ciprofloxacin |  55 (32.54)  |  55 (33.13)  |  0 (0.00)  |  0.605  |
| Sulfamethoxazole |  43 (25.44)  |  43 (25.90)  |  0 (0.00)  |  0.578  |
| Tigecycline |  3 (1.78)  |  3 (1.81)  |  0 (0.00)  |  0.383  |

Table . Antimicrobial resistance of K54-positive and K54-negative *K. pneumoniae* isolates causing abscesses

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Antimicrobial agent** | **ALL*****N=169 (%)*** | **K54-negative** ***N=167(%)*** | **K54-positive*****N=2 (%)*** | **p.overall** |
| Ampicillin | 169 (100.00) | 167 (100.00) | 2 (100.00) |  1.000  |
| Piperacillin/ Tazobactam |  33 (19.53)  |  33 (19.76)  |  0 (0.00)  |   **0.047**   |
| Ampicillin/Sulbactam |  56 (33.14)  |  55 (32.93)  | 1 (50.00)  |  1.000  |
| Cefoperazone/Sulbactam |  34 (20.12)  |  34 (20.36)  |  0 (0.00)  |  1.000  |
| Cefazolin |  61 (36.09)  |  60 (35.93)  | 1 (50.00)  |  1.000  |
| Cefuroxime |  58 (34.32)  |  57 (34.13)  | 1 (50.00)  |  1.000  |
| Cefatriaxone |  57 (33.73)  |  57 (34.13)  |  0 (0.00)  |  0.558  |
| Cefepime |  38 (22.49)  |  38 (22.75)  |  0 (0.00)  |  1.000  |
| Cefotetan |  39 (23.08)  |  39 (23.35)  |  0 (0.00)  |  1.000  |
| Amtreonam |  49 (28.99)  |  49 (29.34)  |  0 (0.00)  |  1.000  |
| Ertapenem |  30 (17.75)  |  30 (17.96)  |  0 (0.00)  |  1.000  |
| Meropenem |  31 (18.34)  |  31 (18.56)  |  0 (0.00)  |  1.000  |
| Imipenem |  31 (18.34)  |  31 (18.56)  |  0 (0.00)  |  1.000  |
| Gentamicin |  30 (17.75)  |  30 (17.96)  |  0 (0.00)  |  1.000  |
| Amikacin |  21 (12.43)  |  21 (12.57)  |  0 (0.00)  |  1.000  |
| Tobramycin |  26 (15.38)  |  26 (15.57)  |  0 (0.00)  |  1.000  |
| Levofloxacin |  40 (23.67)  |  40 (23.95)  |  0 (0.00)  |  1.000  |
| Ciprofloxacin |  55 (32.54)  |  55 (32.93)  |  0 (0.00)  |  0.585  |
| Sulfamethoxazole |  43 (25.44)  |  43 (25.75)  |  0 (0.00)  |  1.000  |
| Tigecycline |  3 (1.78)  |  3 (1.80)  |  0 (0.00)  |  1.000  |

P<0.05 was considered to be statistically significant.

Table . Antimicrobial resistance of K57-positive and K57-negative *K. pneumoniae* isolates causing abscesses

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Antimicrobial agent** | **ALL*****N=169 (%)*** | **K57-negative** ***N=164(%)*** | **K57-positive*****N=5 (%)*** | **p.overall** |
| Ampicillin | 169 (100.00) | 164 (100.00) | 5 (100.00) |  1.000  |
| Piperacillin/ Tazobactam |  33 (19.53)  |  32 (19.51)  | 1 (20.00)  |  **0.039**  |
| Ampicillin/Sulbactam |  56 (33.14)  |  55 (33.54)  | 1 (20.00)  |  **0.049**  |
| Cefoperazone/Sulbactam |  34 (20.12)  |  33 (20.12)  | 1 (20.00)  |  0.050  |
| Cefazolin |  61 (36.09)  |  60 (36.59)  | 1 (20.00)  |  0.124  |
| Cefuroxime |  58 (34.32)  |  57 (34.76)  | 1 (20.00)  |  0.083  |
| Cefatriaxone |  57 (33.73)  |  56 (34.15)  | 1 (20.00)  |  0.062  |
| Cefepime |  38 (22.49)  |  37 (22.56)  | 1 (20.00)  |  0.068  |
| Cefotetan |  39 (23.08)  |  38 (23.17)  | 1 (20.00)  |  0.459  |
| Amtreonam |  49 (28.99)  |  48 (29.27)  | 1 (20.00)  |  0.083  |
| Ertapenem |  30 (17.75)  |  29 (17.68)  | 1 (20.00)  |  **0.036**  |
| Meropenem |  31 (18.34)  |  30 (18.29)  | 1 (20.00)  |  **0.021**  |
| Imipenem |  31 (18.34)  |  30 (18.29)  | 1 (20.00)  |  **0.021**  |
| Gentamicin |  30 (17.75)  |  29 (17.68)  | 1 (20.00)  |  1.000  |
| Amikacin |  21 (12.43)  |  20 (12.20)  | 1 (20.00)  |  **0.013**  |
| Tobramycin |  26 (15.38)  |  25 (15.24)  | 1 (20.00)  |  **0.030**  |
| Levofloxacin |  40 (23.67)  |  39 (23.78)  | 1 (20.00)  |  0.384  |
| Ciprofloxacin |  55 (32.54)  |  53 (32.32)  | 2 (40.00)  |  1.000  |
| Sulfamethoxazole |  43 (25.44)  |  42 (25.61)  | 1 (20.00)  |  **0.030**   |
| Tigecycline |  3 (1.78)  |  3 (1.83)  |  0 (0.00)  |  1.000  |

P<0.05 was considered to be statistically significant.

Table . Antimicrobial resistance of K64-positive and K64-negative *K. pneumoniae* isolates causing abscesses

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Antimicrobial agent** | **ALL*****N=169 (%)*** | **K64-negative** ***N=150(%)*** | **K64-positive*****N=19 (%)*** | **p.overall** |
| Ampicillin | 169 (100.00) | 150 (100.00) | 19 (100.00) |  1.000  |
| Piperacillin/ Tazobactam |  33 (19.53)  |  17 (11.33)  | 16 (84.21)  |  **<0.001**  |
| Ampicillin/Sulbactam |  56 (33.14)  |  40 (26.67)  | 16 (84.21)  |  **<0.001**  |
| Cefoperazone/Sulbactam |  34 (20.12)  |  20 (13.33)  | 14 (73.68)  |  **<0.001**  |
| Cefazolin |  61 (36.09)  |  45 (30.00)  | 16 (84.21)  |  **<0.001**  |
| Cefuroxime |  58 (34.32)  |  42 (28.00)  | 16 (84.21)  |  **<0.001**  |
| Cefatriaxone |  57 (33.73)  |  41 (27.33)  | 16 (84.21)  |  **<0.001**  |
| Cefepime |  38 (22.49)  |  22 (14.67)  | 16 (84.21)  |  **<0.001**  |
| Cefotetan |  39 (23.08)  |  23 (15.33)  | 16 (84.21)  |  **<0.001**  |
| Amtreonam |  49 (28.99)  |  33 (22.00)  | 16 (84.21)  |  **<0.001**  |
| Ertapenem |  30 (17.75)  |  14 (9.33)  | 16 (84.21)  |  **<0.001**  |
| Meropenem |  31 (18.34)  |  15 (10.00)  | 16 (84.21)  |  **<0.001**  |
| Imipenem |  31 (18.34)  |  15 (10.00)  | 16 (84.21)  |  **<0.001**  |
| Gentamicin |  30 (17.75)  |  19 (12.67)  | 11 (57.89)  |  **<0.001**  |
| Amikacin |  21 (12.43)  |  10 (6.67)  | 11 (57.89)  |  **<0.001**  |
| Tobramycin |  26 (15.38)  |  14 (9.33)  | 12 (63.16)  |  **<0.001**  |
| Levofloxacin |  40 (23.67)  |  25 (16.67)  | 15 (78.95)  |  **<0.001**  |
| Ciprofloxacin |  55 (32.54)  |  39 (26.00)  | 16 (84.21)  |  **<0.001**  |
| Sulfamethoxazole |  43 (25.44)  |  33 (22.00)  | 10 (52.63)  |  **0.018**  |
| Tigecycline |  3 (1.78)  |  2 (1.33)  |  1 (5.26)  |  0.188  |

P<0.05 was considered to be statistically significant.

Table . Biofilm formation ability of K1-positive and K1-negative *K. pneumoniae* isolates causing abscesses.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **ALL*****N=169 (%)*** | **K1-negative** ***N=125 (%)*** | **K1-positive*****N=44 (%)*** | **p.overall** |
| result |  |   |   |  0.059  |
| Strong | 28 (16.57 )  | 16 (12.80%)  | 12 (27.27%)  |   |
| Medium | 74 (43.79 )  | 55 (44.00%)  | 19 (43.18%)  |   |
| Weak | 67 (39.64 )  | 54 (43.20%)  | 13 (29.55%)  |   |

**Table .** Biofilm formation ability of K2-positive and K2-negative *K. pneumoniae* isolates causing abscesses.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **ALL*****N=169 (%)*** | **K2-negative** ***N=133 (%)*** | **K2-positive*****N=36 (%)*** | **p.overall** |
| result |  |   |   |  0.363  |
| Strong | 28 (16.57 )  | 24 (18.05%)  |  4 (11.11%)  |   |
| Medium | 74 (43.79 )  | 60 (45.11%)  | 14 (38.89%)  |   |
| Weak | 67 (39.64 )  | 49 (36.84%)  | 18 (50.00%)  |   |

Table . Biofilm formation ability of K5-positive and K5-negative *K. pneumoniae* isolates causing abscesses.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **ALL*****N=169 (%)*** | **K5-negative** ***N=167 (%)*** | **K5-positive*****N=2 (%)*** | **p.overall** |
| result |  |   |   |  1.000  |
| Strong | 28 (16.57 )  | 28 (16.77%)  |  0 (0.00%)  |   |
| Medium | 74 (43.79 )  | 73 (43.71%)  | 1 (50.00%)  |   |
| Weak | 67 (39.64 )  | 66 (39.52%)  | 1 (50.00%)  |   |

Table . Biofilm formation ability of K20-positive and K20-negative *K. pneumoniae* isolates causing abscesses.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **ALL*****N=169 (%)*** | **K20-negative** ***N=166 (%)*** | **K20-positive*****N=3 (%)*** | **p.overall** |
| result |  |   |   |  0.211  |
| Strong | 28 (16.57 )  | 27 (16.27%)  | 1 (33.33%)  |   |
| Medium | 74 (43.79 )  | 74 (44.58%)  |  0 (0.00%)  |   |
| Weak | 67 (39.64 )  | 65 (39.16%)  | 2 (66.67%)  |   |

**Table .** Biofilm formation ability of K54-positive and K54-negative *K. pneumoniae* isolates causing abscesses.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **ALL*****N=169 (%)*** | **K54-negative** ***N=167 (%)*** | **K54-positive*****N=2 (%)*** | **p.overall** |
| result |  |   |   |  0.305  |
| Strong | 28 (16.57 )  | 27 (16.17%)  | 1 (50.00%)  |   |
| Medium | 74 (43.79 )  | 73 (43.71%)  | 1 (50.00%)  |   |
| Weak | 67 (39.64 )  | 67 (40.12%)  |  0 (0.00%)  |   |

Table . Biofilm formation ability of K57-positive and K57-negative *K. pneumoniae* isolates causing abscesses.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **ALL*****N=169 (%)*** | **K57-negative** ***N=164(%)*** | **K57-positive*****N=5(%)*** | **p.overall** |
| result |  |   |   |  1.000  |
| Strong | 28 (16.57 )  | 27 (16.46%)  | 1 (20.00%)  |   |
| Medium | 74 (43.79 )  | 72 (43.90%)  | 2 (40.00%)  |   |
| Weak | 67 (39.64 )  | 65 (39.63%)  | 2 (40.00%)  |   |

Table . Biofilm formation ability of K64-positive and K64-negative *K. pneumoniae* isolates causing abscesses.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **ALL*****N=169 (%)*** | **K64-negative** ***N=150(%)*** | **K64-positive*****N=19(%)*** | **p.overall** |
| result |  |   |   |  0.027  |
| Strong | 28 (16.57 )  | 28 (18.67%)  |  0 (0.00%)  |   |
| Medium | 74 (43.79 )  | 67 (44.67%)  |  7 (36.84%)  |   |
| Weak | 67 (39.64 )  | 55 (36.67%)  | 12 (63.16%)  |   |