Supplemental Table 1. Antibiotic treatments evaluated in this study with spectrum of activity against MDR *Acinetobacter spp.*

|  |  |
| --- | --- |
| Antimicrobial Class | Agentsa |
| Polymyxins | Polymyxin BColistin |
| Penicillins + B-lactamase inhibitors | Piperacillin-tazobactamAmpicillin-sulbactam |
| Extended spectrum cephalosporins | CefepimeCeftazidime |
| Carbapenems | ImipenemMeropenemDoripenem |
| Glycylcyclines | Tigecycline |
| Aminoglycosides | AmikacinTobramycinGentamicin |
| Tetracyclines | DoxycyclineMinocycline |
| Fluoroquinolones | LevofloxacinCiprofloxacin |
| Sulfonamides | Trimethoprim/sulfamethoxazole |
| Antimycobacterials\Rifamycins | Rifampinb |

aList derived from international consensus definition for MDR *Acinetobacter* and antibiotic susceptibility results for this cohort of cultures14

bOnly evaluated as part of combination therapy

Supplemental Table 2. Adjusted logistic regression models assessing the association between antibiotic therapy and 30-day mortality for Bloodstream Infection with MDR *Acinetobacter sp*.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | TotalN (%)=184 | CarbapenemsN (%) = 95 (51.6) | AminoglycosidesN (%) = 55 (29.9) | PolymyxinsN (%) = 31 (16.9) | Extended Spectrum CephalosporinsN (%) = 58 (31.5) | Penicillins - β-lactamase inhibitor combinations N (%) = 94 (51.1) | Combination TherapyN (%) = 92 (50.0) |
| **Not receiving specific antibiotic** |  | Reference  | Reference  | Reference  | Reference  | Reference  | Reference  |
| **Specific antibiotic**  |  | 1.96 (0.96-4.02) | 1.69 (0.76-3.72) | 2.46 (0.94-6.44) | 0.47 (0.21-1.05) | 0.75 (0.37-1.53) | 1.55 (0.72-3.32) |
| **Age**  |  |  |  |  |  |  |  |
| 18-49 | Reference | Reference  | Reference  | Reference  | Reference  | Reference  | Reference  |
| 50-64 | 5 (0.59-42.42) | 7.69 (0.84-69.91) | 7.93 (0.84-74.59) | 9.69 (1.05-89.62)\* | 11.7 (1.22-112.12)\* | 8.76 (0.94-81.55) | 9.52 (1.03-88.29)\* |
| 65+ | 8 (0.97-66.13) | 8.70 (1-75.36)\* | 9.31 (1.05-82.67)\* | 10.47 (1.2-91.42)\* | 12.23 (1.36-110.23)\* | 10.27 (1.17-90.43)\* | 10.94 (1.24-96.39)\* |
| **Race**  |  |  |  |  |  |  |  |
| White  | Reference | Reference  | Reference  | Reference  | Reference  | Reference  | Reference  |
| Black  | 0.67 (0.36-1.27) | \ | \ | \ | \ | \ | \ |
| Other/Missing | 0.98 (0.35-2.75) | \ | \ | \ | \ | \ | \ |
| **Ethnicity**  |  |  |  |  |  |  |  |
| Non-Hispanic | Reference | \ | \ | \ | \ | \ | \ |
| Hispanic | 2.27 (1.05-4.9)\* | \ | \ | \ | \ | \ | \ |
| **Charlson**  | 1.09 (0.99-1.19) | 1.11 (0.99-1.24) | 1.1 (0.99-1.23) | 1.12 (1-1.25) | 1.1 (0.98-1.23) | 1.11 (0.99-1.24) | 1.1 (0.98-1.23) |
| **Gagne Score**  | 1.01 (0.99-1.02) | \ | \ | \ | \ | \ | \ |
| **Admission in <90 days**  | 1.56 (0.77-3.19) | \ | \ | \ | \ | \ | \ |
| **ICU in <90 days**  | 0.51 (0.2-1.32) | \ | \ | \ | \ | \ | \ |
| **Antibiotic Use <90days**  | 2 (0.68-5.94) | \ | \ | \ | \ | \ | \ |
| **Mech. Vent. <90 days**  | 2.8 (1.47-5.34)\*\* | 2.88 (1.33-6.23)\*\* | 2.89 (1.35-6.19)\*\* | 2.78 (1.29-6)\*\* | 2.94 (1.36-6.35)\*\* | 2.74 (1.27-5.9)\* | 3.12 (1.44-6.77)\*\* |
| **LOS**  | 0.98 (0.96-0.99)\*\*\* | 0.97 (0.96-0.99)\*\*\* | 0.97 (0.96-0.98)\*\*\* | 0.97 (0.96-0.98)\*\*\* | 0.97 (0.96-0.99)\*\*\* | 0.97 (0.96-0.99)\*\*\* | 0.97 (0.96-0.98)\*\*\* |
| **Treatment Adequacy**  |  |  |  |  |  |  |  |
| Total Adequacy  | 0.55 (0.21-1.41) | 0.66 (0.21-2.1) | 0.59 (0.19-1.85) | 0.55 (0.17-1.75) | 0.5 (0.15-1.64) | 0.66 (0.21-2.07) | 0.61 (0.2-1.92) |
| Partial Adequacy  | 0.49 (0.2-1.22) | 0.39 (0.13-1.23) | 0.37 (0.12-1.15) | 0.35 (0.11-1.11) | 0.43 (0.14-1.34) | 0.47 (0.15-1.45) | 0.36 (0.11-1.16) |
| Inadequate  | 24 (13.0) | Reference  | Reference  | Reference  | Reference  | Reference  | Reference  |
| **Mono / Combo Therapy**  |  |  |  |  |  |  |  |
| Monotherapy | Reference | Reference  | Reference  | Reference  | Reference  | Reference  | \\\ |
| Combination therapy | 0.73 (0.41-1.32) | \ | \ | \ | \ | \ | \\\ |

Those who received treatments are compared to those who did not receive the specified treatment; \*= significant at 0.05; \*\*= significant at 0.01 \*\*\*= significant at 0.0001

Supplemental Table 3. Adjusted logistic regression models assessing the association between antibiotic therapy and in-hospital mortality for Bloodstream Infection with MDR *Acinetobacter sp*.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | TotalN (%)=184 | CarbapenemsN (%) = 95 (51.6) | AminoglycosidesN (%) = 55 (29.9) | PolymyxinsN (%) = 31 (16.9) | Extended Spectrum CephalosporinsN (%) = 58 (31.5) | Penicillins - β-lactamase inhibitor combinations N (%) = 94 (51.1) | Combination TherapyN (%) = 92 (50.0) |
| **Not receiving specific antibiotic** |  | Reference  | Reference  | Reference  | Reference  | Reference  | Reference  |
| **Specific antibiotic**  |  | 1.65 (0.85-3.18) | 1.24 (0.6-2.55) | 1.96 (0.81-4.73) | 0.59 (0.3-1.16) | 0.74 (0.39-1.4) | 1.44 (0.71-2.95) |
| **Age**  |  |  |  |  |  |  |  |
| 18-49 | Reference | Reference  | Reference  | Reference  | Reference  | Reference  | Reference  |
| 50-64 | 3.19 (0.62-16.54) | 4.43 (0.78-25.09) | 4.41 (0.77-25.16) | 4.23 (0.74-24.22) | 4.63 (0.82-26.05) | 3.66 (0.66-20.43) | 5.07 (0.89-29.08) |
| 65+ | 4.2 (0.83-21.13) | 5.73 (1.04-31.56)\* | 5.81 (1.05-32)\* | 5.91 (1.06-33.06)\* | 6.32 (1.16-34.53)\* | 5.41 (0.99-29.52) | 6.66 (1.19-37.14)\* |
| **Race**  |  |  |  |  |  |  |  |
| White  | Reference | Reference  | Reference  | Reference  | Reference  | Reference  | Reference  |
| Black  | 0.89 (0.48-1.65) | 0.96 (0.49-1.89) | 0.87 (0.44-1.72) | 0.87 (0.45-1.69) | 0.88 (0.45-1.7) | 0.89 (0.46-1.72) | 0.88 (0.45-1.74) |
| Other/Missing | 0.26 (0.08-0.84)\* | 0.18 (0.05-0.64)\*\* | 0.16 (0.04-0.57)\*\* | 0.19 (0.05-0.68)\* | 0.19 (0.05-0.65)\*\* | 0.2 (0.06-0.7)\* | 0.17 (0.05-0.61)\*\* |
| **Ethnicity**  |  |  |  |  |  |  |  |
| Non-Hispanic | Reference | \ | \ | \ | \ | \ | \ |
| Hispanic | 1.64 (0.76-3.54) | \ | \ | \ | \ | \ | \ |
| **Charlson**  | 1.01 (0.92-1.1) | 0.99 (0.89-1.09) | 0.97 (0.87-1.07) | 0.99 (0.9-1.1) | 1 (0.9-1.1) | 0.99 (0.9-1.09) | 0.96 (0.87-1.07) |
| **Gagne Score**  | 1 (0.99-1.02) | \ | \ | \ | \ | \ | \ |
| **Admission in <90 days**  | 1.16 (0.58-2.32) | \ | \ | \ | \ | \ | \ |
| **ICU in <90 days**  | 0.48 (0.19-1.19) | \ | \ | \ | \ | \ | \ |
| **Antibiotic Use <90days**  | 3.71 (1.16-11.84)\* | \ | 3.65 (1.06-12.59)\* | \ | \ | \ | 3.73 (1.07-12.99)\* |
| **Mech. Vent. <90 days**  | 2.93 (1.51-5.67)\*\* | 3 (1.47-6.14)\*\* | 2.61 (1.26-5.41)\*\* | 3.19 (1.58-6.47)\*\* | 3.36 (1.66-6.79)\*\* | 3.17 (1.56-6.47)\*\* | 2.74 (1.31-5.72)\*\* |
| **LOS**  | 1 (0.99-1) | 1 (0.99-1)\* | 1 (0.99-1)\* | \ | \ | \ | 0.99 (0.99-1)\* |
| **Treatment Adequacy**  |  |  |  |  |  |  |  |
| Total Adequacy  | 0.55 (0.21-1.41) | 0.57 (0.2-1.6) | 0.53 (0.19-1.49) | 0.51 (0.19-1.41) | 0.47 (0.17-1.32) | 0.58 (0.21-1.6) | 0.53 (0.19-1.49) |
| Partial Adequacy  | 0.83 (0.34-2.07) | 0.79 (0.29-2.17) | 0.8 (0.29-2.24) | 0.74 (0.28-1.97) | 0.88 (0.33-2.35) | 0.91 (0.34-2.41) | 0.74 (0.26-2.09) |
| Inadequate  | Reference | Reference  | Reference  | Reference  | Reference  | Reference  | Reference  |
| **Mono / Combo Therapy**  |  |  |  |  |  |  |  |
| Monotherapy | Reference | Reference  | Reference  | Reference  | Reference  | Reference  | \\\ |
| Combination therapy | 1.14 (0.64-2.03) | \ | \ | \ | \ | \ | \\\ |

Significant associations are shown in bold

Supplemental Table 4: Sensitivity analysis of adjusted Generalized Linear Models for Cost at 30-days for Bloodstream Infection with MDR *Acinetobacter spp.* stratified by antibiotic regimen

|  |  |
| --- | --- |
|  | Adjusted |
| Inpatient Cost | Pharmacy Cost | Total Cost |
| Antibiotic Therapy | ModelOR (95%CI) | p-value | ModelOR (95%CI) | p-value | ModelOR (95%CI) | p-value |
| Carbapenems  | Model Not Significant |  | **0.66 (0.08-1.23)** | **0.026** | Model Not Significant |  |
| Aminoglycosides  | Model Not Significant |  | Model Not Significant |  | Model Not Significant |  |
| Polymyxins | Model Not Significant |  | **1.32 (0.13-2.51)** | **0.029** | Model Not Significant |  |
| Fluoroquinolones | Model Not Significant |  | Model Not Significant |  | Model Not Significant |  |
| Ex. Spec. Cephalosporins  | Model Not Significant |  | Model Not Significant |  | Model Not Significant |  |
| Penicillins - β-lactamase inhibitor combinations  | Model Not Significant |  | **-0.63 (-1.23- -0.03)** | **0.041** | **1.36 (00.61-2.12)** | **0.000** |
| Tetracyclines | Model Not Significant |  | Model Not Significant |  | Model Not Significant |  |
| Sulfonamides | Model Not Significant |  | Model Not Significant |  | **-4.01 (-5.96- -2.06)** | **0.000** |
| Glycylcyclines | Model Not Significant |  | Model Not Significant |  | Model Not Significant |  |
| Combination therapy | Model Not Significant |  | **0.77 (0.18-1.37)** | **0.011** | Model Not Significant |  |
| Intra+extra therapy | Model Not Significant |  | Model Not Significant |  | Model Not Significant |  |

Significant associations are shown in bold