**SUPPPLEMENTAL TABLE 3: Details of covariate association**

**with antibiotic utilization in full mixed-effects models**

|  |  |  |
| --- | --- | --- |
|  | **IRR** | ***P* value** |
| **Anti-pseudomonal antibiotics** |  |  |
| *Patient-level variables* |  |  |
| Age | 0.998 | .541 |
| Female sex | 0.943 | .187 |
| Non-white race | 0.996 | .946 |
| AML\* | 0.945 | .320 |
| Disease status (ref: CR1\*\*) |  |  |
|  ≥CR2\*\*\* | 1.050 | .326 |
|  Primary induction failure | 1.043 | .568 |
| Donor type (ref: matched sibling) |  |  |
|  Matched unrelated | 1.139 | .101 |
|  Mismatched unrelated | 1.111 | .236 |
| Graft source (ref: bone marrow) |  |  |
|  Cord | 1.103 | .244 |
|  Peripheral stem cells | 1.121 | .054 |
| Chemotherapy-based conditioning | 1.024 | .710 |
| CMV positive recipient | 1.024 | .605 |
| DSI  | 1.002 | .798 |
| *Hospital-level variables* |  |  |
| Hospital volume (rate per 1000 admissions) | 0.973 | .040 |
| Proportion female  | 0.236 | .173 |
| Proportion non-white  | 0.863 | .687 |
| Proportion public insurance  | 0.882 | .682 |
| **Gram positive antibiotics** |  |  |
| *Patient-level variables* |  |  |
| Age | 1.001 | .945 |
| Female sex | 0.985 | .865 |
| Non-white race | 0.945 | .608 |
| AML | 0.976 | .828 |
| Disease status (ref: CR1) |  |  |
|  ≥CR2 | 1.035 | .720 |
|  Primary induction failure | 1.186 | .239 |
| Donor type (ref: matched sibling) |  |  |
|  Matched unrelated | 1.119 | .467 |
|  Mismatched unrelated | 1.260 | .180 |
| Graft source (ref: bone marrow) |  |  |
|  Cord | 1.261 | .155 |
|  Peripheral stem cells | 1.210 | .106 |
| Chemotherapy-based conditioning | 0.902 | .411 |
| CMV positive recipient | 0.964 | .680 |
| DSI$ | 1.019 | .191 |
| *Hospital-level variables* |  |  |
| Hospital volume (rate per 1000 admissions) | 0.999 | .973 |
| Proportion female  | 15.83 | .233 |
| Proportion non-white  | 1.290 | .746 |
| Proportion public insurance  | 1.425 | .606 |

**SUPPPLEMENTAL TABLE 3 CONTINUED**

|  |  |  |
| --- | --- | --- |
| **Carbapenems** | **IRR** | ***P* value** |
|  |  |
| *Patient-level variables* |  |  |
| Age | 1.017 | .393 |
| Female sex | 0.824 | .323 |
| Non-white race | 0.943 | .798 |
| AML | 0.877 | .593 |
| Disease status (ref: CR1) |  |  |
|  ≥CR2 | 0.981 | .929 |
|  Primary induction failure | 1.120 | .723 |
| Donor type (ref: matched sibling) |  |  |
|  Matched unrelated | 1.647 | .176 |
|  Mismatched unrelated | 1.224 | .625 |
| Graft source (ref: bone marrow) |  |  |
|  Cord | 1.063 | .865 |
|  Peripheral stem cells | 1.454 | .128 |
| Chemotherapy-based conditioning | 1.426 | .205 |
| CMV positive recipient | 1.292 | .204 |
| DSI  | 1.073 | .066 |
| *Hospital-level variables* |  |  |
| Hospital volume (rate per 1000 admissions) | 0.918 | .158 |
| Proportion female  | 0.099 | .621 |
| Proportion non-white  | 1.017 | .991 |
| Proportion public insurance  | 2.366 | .532 |

\*Acute Myeloid Leukemia \*\*First clinical remission \*\*\*Second clinical

remission or later $Days of significant illness