**Appendix II.** Results from multilevel models where the main effect is hospital-level neuraxial anesthesia volume (in quartiles [Q1-4]; extension of Table 5 with addition of effect estimates for separate complications (respiratory and cardiac) and resource utilization variables (blood transfusion and intensive care unit admission); ORs for binary outcome variables.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **KNEE** | | | **HIP** | | |
|  | **OR** | **95% CI** | | **OR** | **95% CI** | |
| **Respiratory Complications** | | | |  |  |  |
| **Q1** | 0.99 | 0.78 | 1.25 | 1.08 | 0.80 | 1.46 |
| **Q2** | 1.17 | 0.94 | 1.47 | 1.06 | 0.79 | 1.42 |
| **Q3** | 1.06 | 0.83 | 1.35 | 0.92 | 0.68 | 1.25 |
| **Q4** | 1.29 | 0.95 | 1.75 | 1.02 | 0.69 | 1.49 |
| **Cardiac Complications** | | | |  |  |  |
| **Q1** | 0.79 | 0.61 | 1.02 | 0.78 | 0.59 | 1.04 |
| **Q2** | 0.89 | 0.70 | 1.13 | 0.91 | 0.70 | 1.20 |
| **Q3** | 0.75\* | 0.59 | 0.97 | 0.77 | 0.58 | 1.02 |
| **Q4** | 0.85 | 0.63 | 1.17 | 0.77 | 0.56 | 1.07 |
| **Blood Transfusion Need** | | | |  |  |  |
| **Q1** | 0.79 | 0.50 | 1.24 | 0.78 | 0.47 | 1.32 |
| **Q2** | 0.81 | 0.52 | 1.25 | 0.93 | 0.57 | 1.53 |
| **Q3** | 0.78 | 0.48 | 1.27 | 0.66 | 0.39 | 1.11 |
| **Q4** | 0.76 | 0.40 | 1.44 | 0.49\* | 0.25 | 0.98 |
| **Intensive Care Unit Admission** | | | |  |  |  |
| **Q1** | 1.13 | 0.75 | 1.70 | 0.82 | 0.52 | 1.30 |
| **Q2** | 0.98 | 0.67 | 1.44 | 0.87 | 0.56 | 1.35 |
| **Q3** | 0.88 | 0.58 | 1.34 | 0.75 | 0.48 | 1.18 |
| **Q4** | 0.96 | 0.56 | 1.67 | 0.86 | 0.48 | 1.55 |

\*P<0.05

Models adjusted for age, sex, race, insurance type, hospital annual procedure volume, hospital teaching status, hospital location, hospital bed size, year of procedure, general anesthesia use, PCA use, intravenous acetaminophen, NSAIDs, Cyclooxygenase-2 Inhibitors, Ketamine, Pregabalin/Gabapentin, peripheral nerve block use, Deyo-Charlson comorbidity index, history of substance use/abuse, pain conditions, psychiatric comorbidities, sleep apnea, obesity