**Supplementary Table 2:** Baseline characteristics of the study population categorized by levels of opioid use

|  | **Annual Morphine Milligram Equivalent (AMME) Dose** | | |
| --- | --- | --- | --- |
|  | 1-30 (N=351) | 30-60 (N=221) | >60 (N=399) |
| **Demographics** |  |  |  |
| Mean age at transplant (SD), years | 60 (10) | 60 (11) | 60 (10) |
| Males, n (%) | 336 (96) | 212 (96) | 387 (97) |
| Race, n (%) |  |  |  |
| Whites | 237 (68) | 143 (65) | 254 (64) |
| African Americans | 93 (26) | 67 (30) | 127 (31) |
| Other | 21 (6) | 11 (5) | 18 (5) |
| Transplant Center, n (%) |  |  |  |
| VA | 130 (37) | 96 (43) | 97 (24) |
| Not a VA center | 200 (57) | 115 (52) | 283 (71) |
| Missing | 21 (6) | 10 (5) | 19 (5) |
| Marital Status, n (%) |  |  |  |
| Married | 224 (64) | 144 (65) | 245 (61) |
| Single | 30 (9) | 19 (8.6) | 30 (8) |
| Divorced | 83 (24) | 48 (22) | 104 (26) |
| Widowed | 14 (4) | 8 (3.6) | 15 (4) |
| Missing |  | 2 (0.9) | 5 (1) |
| Service Connected Disability, n (%) | 230 (66) | 139 (63) | 255 (64) |
| Median per capita income (IQR), $USD | 22,053 (10,476-35,028) | 22,020 (10,920-37,068) | 22,818 (8,521-35,664) |
| **Donor type, n (%)** |  |  |  |
| Dead | 259 (74) | 169 (77) | 294 (74) |
| Alive | 89 (25) | 52 (24) | 102 (26) |
| **Comorbidities, n (%)** |  |  |  |
| Myocardial Infarction | 32 (10) | 30 (14) | 53 (13) |
| Congestive heart failure | 81 (23) | 47 (21) | 107 (27) |
| Peripheral Vascular Disease | 93 (27) | 71 (32) | 113 (28) |
| Cerebrovascular Disease | 57 (16) | 31 (14) | 73 (18) |
| Dementia | 50 (14) | 28 (13) | 73 (18) |
| Connective Tissue Disease | 29 (8) | 21 (10) | 45 (11) |
| Peptic Ulcer Disease | 22 (6) | 16 (7) | 20 (5) |
| AIDS/HIV | 6 (2) | 6 (3) | 9 (2) |
| Anemia | 177 (50) | 132 (60) | 241 (60) |
| Hyperlipidemia | 163 (46) | 106 (48) | 194 (49) |
| Ischemic Heart Disease | 90 (26) | 60 (27) | 127 (32) |
| Chronic Pulmonary Disease | 65 (19) | 42 (19) | 117 (29) |
| Liver Disease | 88 (25) | 67 (30) | 141 (35) |
| Diabetes | 225 (64) | 130 (59) | 265 (66) |
| Cancer | 54 (15) | 43 (20) | 91 (23) |
| Paraplegia and Hemiplegia | 21 (6) | 6 (3) | 22 (6) |
| Atrial Fibrillation | 46 (13) | 27 (12) | 50 (13) |
| Depression | 72 (21) | 39 (18) | 115 (29) |
| Hypertension | 311 (89) | 187 (85) | 351 (88) |
| **Preemptive transplantation, n (%)** | 46 (13) | 38 (17) | 65 (16) |
| **Median CCI (IQR)** | 2 (1-5) | 2 (1-6) | 3 (2-6) |
| **Smoker, n (%)** |  |  |  |
| Never | 139 (40) | 81 (37) | 129 (32) |
| Current | 90 (26) | 60 (27) | 109 (27) |
| Past smoker | 85 (24) | 59 (27) | 106 (27) |
| Missing | 37 (10) | 21 (9) | 55 (14) |
| **RRT modality, n (%)** |  |  |  |
| Hemodialysis | 251 (71.5) | 149 (67) | 277 (69) |
| Peritoneal Dialysis | 42 (12) | 29 (13) | 46 (12) |
| Transplant | 46 (13) | 38 (17) | 65 (16) |
| Uncertain Dialysis | 9 (2.6) | 5 (2) | 8 (2) |
| Missing | 3 (0.9) |  | 3 (0.8) |
| **Median dialysis duration (IQR), days** | 2,024 (1,520-2,472) | 2,016 (1,492-2,461) | 1,926 (1,376-2,432) |
| **Vital Signs, Mean (SD)** |  |  |  |
| SBP, mmHg | 138 (17) | 138 (16) | 137(17) |
| DBP, mmHg | 76 (9) | 76 (11) | 75 (10) |
| BMI, kg/m2 | 28 (4) | 29 (5) | 29 (5) |
| **Medication use, n (%)** |  |  |  |
| ESAs | 60 (17) | 45 (20) | 70 (18) |
| Native vitamin D | 93 (26) | 47 (21) | 89 (22) |
| Active vitamin D | 103 (29) | 61 (28) | 113 (28) |
| Sevelamer | 150 (43) | 107 (48) | 175 (44) |
| Lanthanum | 33 (9) | 39 (18) | 53 (13) |
| Calcium Acetate | 131 (37) | 82 (37) | 130 (33) |
| Anticoagulants | 88 (25) | 65 (29) | 96 (24) |
| Thrombolytics | 4 (1) | 5 (2) | 7 (2) |
| Aspirin | 105 (30) | 63 (29) | 124 (31.1) |
| Digitalis | 2 (0.6) | 2 (0.9) | 6 (2) |
| β‐blockers | 245 (70) | 154 (70) | 280 (70) |
| Alpha Blockers | 76 (22) | 37 (17) | 96 (24) |
| Calcium channel Blockers | 203 (59) | 132 (60) | 246 (62) |
| Antianginals | 26 (7) | 18 (8) | 58 (15) |
| Statins | 217 (62) | 125 (57) | 245 (61) |
| Vasodilators | 82 (23) | 58 (26) | 127 (32) |
| Thiazides | 15 (4) | 13 (6) | 32 (8) |
| Potassium Sparing Diuretics | 6 (2) | 11 (5) | 20 (5) |
| RAAS inhibitors | 153 (44) | 112 (51) | 191 (48) |
| Radio contrast media | 4 (1) | 5 (2) | 3 (0.8) |
| Insulin | 167 (48) | 109 (49) | 190 (48) |
| **Labs, Mean (SD)** |  |  |  |
| Albumin | 4 (0.4) | 4 (0.4) | 4 (0.6) |
| AST | 23 (14) | 25 (22) | 24 (15) |
| ALT | 23 (13) | 25 (23) | 24 (15) |
| Hemoglobin | 12 (1) | 11 (1) | 11 (1) |
| Phosphorus | 5 (1) | 5 (1) | 5 (1) |
| PTH | 313 (190) | 395 (320) | 330 (247) |

AIDS, Acquired Immunodeficiency Syndrome; ALT, alanine aminotransferase; AST, aspartate aminotransferase; BMI, body mass index; CCI, Charlson Comorbidity Index; DBP, diastolic blood pressure; ESAs, erythropoietin‐stimulating agents; HIV, Human Immunodeficiency Virus; IPTW, inverse probability of treatment weighting; IQR, interquartile range; PTH, parathyroid hormone; RAAS, renin-angiotensin-aldosterone system; RRT, renal replacement therapy; SBP, systolic blood pressure; SD, standard deviation; VA, Veterans Affairs; USD, United States dollar.