**Title:** Effect of anti-hypertensive medication history on arteriovenous fistula maturation outcomes.

**Supplemental Material**

Supplemental Table 1: Baseline characteristics by beta-blocker use.

Supplemental Table 2: Baseline characteristics by diuretic use.

Supplemental Figure 1: AVF diameter and flow characteristics of ACE-I users and non-users.

Supplemental Figure 2: AVF diameter and flow characteristics of CCB users and non-users.

Supplemental Figure 3: AVF diameter and flow characteristics of beta-blocker users and non-users.

Supplemental Figure 4: AVF diameter and flow characteristics of diuretic users and non-users.

**Figure legend**

**Supplemental Figure 1. AVF diameter and flow characteristics of ACE-I users and non-users.**

Box plots of AVF vein diameter (mm) and flow rate (mL/min) over time for ACE-I users *versus* non-users. Plots are grouped by upper-arm (a and b) and forearm AVFs (c and d). The median AVF inner vein diameter is shown for preoperative to 6-week postoperative time points (a and c). The median AVF flow rate is shown for 1-day to 6-week postoperative time points (b and d). Each box plot depicts the 25th percentile, median, 75th percentile, and outlying values of AVF vein diameter and flow rate. White box plots represent ACE-I non-users, and gray box plots represent ACE-I users.

**Supplemental Figure 2. AVF diameter and flow characteristics of CCB users and non-users.**

Box plots of AVF vein diameter (mm) and flow rate (mL/min) over time for CCB users *versus* non-users. Plots are grouped by upper-arm (a and b) and forearm AVFs (c and d). The median AVF inner vein diameter is shown for preoperative to 6-week postoperative time points (a and c). The median AVF flow rate is shown for 1-day to 6-week postoperative time points (b and d). Each box plot depicts the 25th percentile, median, 75th percentile, and outlying values of AVF vein diameter and flow rate. White box plots represent CCB non-users, and gray box plots represent CCB users.

**Supplemental Figure 3. AVF diameter and flow characteristics of beta-blocker users and non-users.**

Box plots of AVF vein diameter (mm) and flow rate (mL/min) over time for beta-blocker users *versus* non-users. Plots are grouped by upper-arm (a and b) and forearm AVFs (c and d). The median AVF inner vein diameter is shown for preoperative to 6-week postoperative time points (a and c). The median AVF flow rate is shown for 1-day to 6-week postoperative time points (b and d). Each box plot depicts the 25th percentile, median, 75th percentile, and outlying values of AVF vein diameter and flow rate. White box plots represent beta-blocker non-users, and gray box plots represent beta-blocker users.

**Supplemental Figure 4. AVF diameter and flow characteristics of diuretic users and non-users.**

Box plots of AVF vein diameter (mm) and flow rate (mL/min) over time for diuretic users *versus* non-users. Plots are grouped by upper-arm (a and b) and forearm AVFs (c and d). The median AVF inner vein diameter is shown for preoperative to 6-week postoperative time points (a and c). The median AVF flow rate is shown for 1-day to 6-week postoperative time points (b and d). Each box plot depicts the 25th percentile, median, 75th percentile, and outlying values of AVF vein diameter and flow rate. White box plots represent diuretic non-users, and gray box plots represent diuretic users.

**Supplemental Table 1. Baseline characteristics by beta-blocker use.**

|  |  |
| --- | --- |
|  | Beta-blocker use |
| Yes(N = 440) | No(N = 162) |
| Age (years) | 55.2 ± 13.2 | 54.6 ± 13.9 |
| Male sex | 312 (70.9) | 111 (68.5) |
| Race/ethnicity |  |  |
| White | 205 (46.6) | 78 (48.1) |
| Black | 194 (44.1) | 70 (43.2) |
| Other | 41 (9.3) | 14 (8.6) |
| Education1 |  |  |
| No high school diploma | 111 (25.2) | 50 (30.9) |
| High school diploma | 121 (27.5) | 42 (25.9) |
| Post-secondary education | 195 (44.3) | 65 (40.1) |
| Smoking2 |  |  |
| Current | 79 (18.1) | 26 (16.1) |
| Former | 166 (38.1) | 54 (33.5) |
| Never | 191 (43.8) | 81 (50.3) |
| Maintenance dialysis | 277 (63.0) | 106 (65.4) |
| History of diabetes | 271 (61.6) | 82 (50.6) |
| Prevalent cardiovascular disease | 236 (53.6) | 54 (33.3) |
| History of congestive heart failure | 139 (31.6) | 26 (16.0) |
| Body mass index (kg/m2) | 30.5 ± 7.6 | 29.9 ± 7.4 |
| Systolic blood pressure (mmHg) | 152.4 ± 23.9 | 148.1 ± 23.5 |
| Estimated GFR (mL/min/1.73m2)\* | 13.5 ± 4.6 | 14.7 ± 5.3 |
| AVF location |  |  |
| Forearm | 110 (25.0) | 33 (20.4) |
| Upper arm | 330 (75.0) | 129 (79.6) |
| Antihypertensive medication use |  |  |
|  No antihypertensive medications | 0 (0.0) | 32 (19.8) |
| ACE-I/ARB | 219 (49.8) | 65 (40.1) |
| Beta-blockers | 440 (100.0) | 0 (0.0) |
| CCB | 301 (68.4) | 92 (56.8) |
| Diuretics | 238 (54.1) | 54 (33.3) |
| Values in the table expressed as mean ± standard deviation or number (percent).GFR=glomerular filtration rate1Education data missing for 18 participants.2Smoking status missing for 5 participants.\*Excludes participants on dialysis |

**Supplemental Table 2. Baseline characteristics by diuretic use.**

|  |  |
| --- | --- |
|  | Diuretic use |
| Yes(N = 292) | No(N = 310) |
| Age (years) | 56.9 ± 11.8 | 53.3 ± 14.5 |
| Male sex | 199 (68.2) | 224 (72.3) |
| Race/ethnicity |  |  |
| White | 150 (51.4) | 133 (42.9) |
| Black | 116 (39.7) | 148 (47.7) |
| Other | 26 (8.9) | 29 (9.4) |
| Education1 |  |  |
| No high school diploma | 78 (26.7) | 83 (26.8) |
| High school diploma | 68 (23.3) | 95 (30.6) |
| Post-secondary education | 131 (44.9) | 129 (41.6) |
| Smoking2 |  |  |
| Current | 44 (15.2) | 61 (19.8) |
| Former | 115 (39.8) | 105 (34.1) |
| Never | 130 (45.0) | 142 (46.1) |
| Maintenance dialysis | 131 (44.9) | 252 (81.3) |
| History of diabetes | 206 (70.5) | 147 (47.4) |
| Prevalent cardiovascular disease | 159 (54.5) | 131 (42.3) |
| History of congestive heart failure | 88 (30.1) | 77 (24.8) |
| Body mass index (kg/m2) | 32.5 ± 7.8 | 28.4 ± 6.8 |
| Systolic blood pressure (mmHg) | 153.9 ± 23.2 | 148.6 ± 24.2 |
| Estimated GFR (mL/min/1.73m2)\* | 13.7 ± 4.6 | 13.9 ± 5.3 |
| AVF location |  |  |
| Forearm | 68 (23.3) | 75 (24.2) |
| Upper arm | 224 (76.7) | 235 (75.8) |
| Antihypertensive medication use |  |  |
| No antihypertensive medications | 0 (0.0) | 32 (10.3) |
| ACE-I/ARB | 141 (48.3) | 143 (46.1) |
| Beta-blockers | 238 (81.5) | 202 (65.2) |
| CCB | 215 (73.6) | 178 (57.4) |
| Diuretics | 292 (100.0) | 0 (0.0) |
| Values in the table expressed as mean ± standard deviation or number (percent).GFR=glomerular filtration rate1Education data missing for 18 participants.2Smoking status missing for 5 participants.\*Excludes participants on dialysis |

**Supplemental Figure 1. AVF diameter and flow characteristics of ACE-I/ARB users and non-users.**

**Minimum AVF vein diameter**

**AVF Flow**



**Supplemental Figure 2. AVF diameter and flow characteristics of CCB users and non-users.**

**AVF Flow**

**Minimum AVF vein diameter**



a.

b.

c.

d.

**Supplemental Figure 3. AVF diameter and flow characteristics of beta-blocker users and non-users.**

**Minimum AVF vein diameter**

**AVF Flow**



a.

b.

c.

d.

**Supplementary Figure 4. AVF diameter and flow characteristics of diuretic users and non-users.**

**Minimum AVF vein diameter**

**AVF Flow**



d.

b.

a.

c.