

## SUPPLEMENTAL MATERIAL

**Supplemental Table I. Characteristics of ERICH ICH cases and controls** Note: %, percent; BMI, body mass index; n, number; NDRI, norepinephrine–dopamine reuptake inhibitor; SARI, Serotonin antagonist and reuptake inhibitors; SD, standard deviation; SNRI, serotonin–norepinephrine reuptake inhibitor; SSRI, selective serotonin reuptake inhibitor; Significance was set at  $p < 0.05$  using chi-square and t-test's as appropriate.

	<b>Cases (n=2287)</b>	<b>Controls (n=2895)</b>	<b>p-value</b>
Age, (mean), years	61.7(14.0)	61.4(14.0)	0.837
Female (%)	938(41.0)	1205(41.6)	0.658
BMI, mean (SD)	29.0(7.2)	29.6(6.7)	<0.001
Prior Stroke, n (%)	212(9.3)	39(1.3)	<0.001
Hypertension, n (%)	1760(77.0)	1534(53.0)	<0.001
Diabetes, n (%)	566(24.7)	619(21.4)	0.004
High Cholesterol, n (%)	922(40.3)	1348(46.6)	<0.001
Heart Disease, n (%)	454(19.9)	396(13.7)	<0.001
Depression, n (%)	435(19.0)	556(19.2)	0.867
Heavy Alcohol Use, n (%)	314(13.7)	251(8.7)	<0.001
History of Tobacco, n (%)	1167(51.0)	1515(52.3)	0.351
Current Tobacco Use, n (%)	449(19.6)	505(17.4)	0.044
Illicit Drug Use, n (%)	172(7.5)	146(5.0)	<0.001
Non-Aspirin Antiplatelet Use, n (%)	125(5.5)	110(3.8)	0.004
Aspirin Use, n (%)	910(39.8)	1208(41.7)	0.159
Anticoagulant Use, n (%)	220(9.6)	91(3.1)	<0.001
SNRI Use, n (%)	146(6.4)	206(7.1)	0.299
SARI Use, n (%)	28(1.2)	68(2.3)	0.003
NDRI Use, n (%)	30(1.3)	49(1.7)	0.267
Tricyclic Antidepressant Use, n (%)	9(0.4)	46(1.6)	<0.001
Tetracyclic Antidepressant Use, n (%)	24(1.0)	33(1.1)	0.757
Presence of APOE e2, n (%)	11(0.5)	9(0.3)	0.327
Presence of APOE e4, n (%)	327(14.3)	429(14.8)	0.598
BMI, mean (SD)	687(30.0)	787(27.2)	0.024

**Supplemental Table II. Characteristics of propensity score matched cohorts of ICH patients with new post-ICH SSRI use versus ICH patients without new post-ICH SSRI use.** For the association of new post-ICH SSRI use and 3-month outcome, propensity score analyses were used by matching patients into the balanced, 1:1 ratio nearest neighbor approach (subjects with ICH without new, post-ICH SSRI use). Significant difference in univariate analysis set at  $p < 0.05$ . Note: %, body mass index; GCS, Glasgow Coma Scale; ICH, intracerebral hemorrhage; IVH, intraventricular hemorrhage; ml, milliliter; mRS, modified Rankin Scale; NDRI, norepinephrine–dopamine reuptake inhibitor; SARI, Serotonin antagonist and reuptake inhibitors; SNRI, serotonin–norepinephrine reuptake inhibitor; SSRI, selective serotonin reuptake inhibitor.

	<b>New SSRI use (n=208)</b>	<b>Matched Controls (n=208)</b>	<b>Total (n=416)</b>	<b>p-value</b>
Age, (mean), years	56.0 (13.6)	55.2 (12.6)	55.6 (13.1)	0.379
Female (%)	79 (38.0)	75 (36.1)	154 (37.0)	0.685
BMI, mean (SD)	29.6 (7.1)	29.6 (7.3)	29.6 (7.2)	0.998
Prior Stroke, n (%)	16 (7.7)	20 (9.6)	36 (8.7)	0.486
Hypertension, n (%)	161 (77.4)	150 (72.1)	311 (74.8)	0.214
Diabetes, n (%)	43 (20.7)	42 (20.2)	85 (20.4)	0.903
High Cholesterol, n (%)	60 (28.8)	66 (31.7)	126 (30.3)	0.522
Heart Disease, n (%)	30 (14.4)	24 (11.5)	54 (13.0)	0.381
Depression, n (%)	37 (17.8)	35 (16.8)	72 (17.3)	0.796
New Post-ICH Depression, n (%)	26 (12.5)	12 (5.8)	38 (9.1)	0.017
Heavy Alcohol Use, n (%)	30 (14.4)	30 (14.4)	60 (14.4)	1.000
History of Tobacco, n (%)	107 (51.4)	101 (48.6)	208 (50.0)	0.556
Illicit Drug Use (%)	19 (9.1)	20 (9.6)	39 (9.4)	0.866
Illicit Drug Use, n (%)	14 (6.7)	11 (5.3)	25 (6.0)	0.536
Non-Aspirin Antiplatelet Use, n (%)	75 (36.1)	77 (37.0)	152 (36.5)	0.839
Aspirin Use, n (%)	13 (6.3)	21 (10.1)	34 (8.2)	0.152
Anticoagulant Use, n (%)	4 (1.9)	5 (2.4)	9 (2.2)	0.736
SNRI Use, n (%)	0 (0.0)	2 (1.0)	2 (0.5)	0.156
SARI Use, n (%)	0 (0.0)	0 (0.0)	0 (0.0)	N/A
Tricyclic Antidepressant Use, n (%)	2 (1.0)	2 (1.0)	4 (1.0)	1.000
Tetracyclic Antidepressant Use, n (%)	1 (0.5)	1 (0.5)	1 (0.5)	1.000
Pre-ICH mRS $\geq 3$ , n (%)	4 (1.9)	2 (1.0)	6 (1.4)	0.411
Admission GCS, mean (SD)	12.8 (3.1)	12.5 (3.6)	12.6 (3.4)	0.881
Lobar, n (%)	149 (71.6)	150 (72.1)	299 (71.9)	0.913
Presence of IVH, n (%)	102 (49.0)	108 (51.9)	210 (50.5)	0.556
ICH volume, mean (SD), mL	20.9 (21.8)	22.9 (22.7)	21.9 (22.2)	0.686
Post-ICH mRS $\geq 3$ , n (%)	176 (84.6)	170 (81.7)	346 (83.2)	0.432
3-month mRS $\geq 3$ , n (%)	134 (64.4)	118 (56.7)	252 (60.6)	0.108

**Supplemental Table III. Case/control cohort characteristics of pre-ICH SSRI use stratified by race/ethnicity.** Significance was set at  $p < 0.05$  using chi-square and t-test's as appropriate for each race/ethnicity category. APOE, apolipoprotein E gene; %, percent; BMI, body mass index; n, number; ICH, intracerebral hemorrhage; NDRI, norepinephrine–dopamine reuptake inhibitor; SARI, Serotonin antagonist and reuptake inhibitors; SNRI, serotonin–norepinephrine reuptake inhibitor; SSRI, selective serotonin reuptake inhibitor; Significance was set at  $p < 0.05$  using chi-square and t-test's as appropriate.

	Black			Hispanic			White			Total		
	No SSRI use (n=1634)	SSRI use (n=66)	p-value	No SSRI use (n=1621)	SSRI use (n=98)	p-value	No SSRI use (n=1575)	SSRI use (n=188)	p-value	No SSRI use (n=4830)	SSRI use (n=352)	p-value
<b>ICH, n (%)</b>	714 (43.7)	24 (36.4)	0.239	730 (45.0)	34 (34.7)	0.046	697 (44.3)	88 (46.8)	0.505	2141 (44.3)	146 (41.5)	0.299
<b>Lobar ICH, n (%)</b>	173 (15.8)	6 (12.5)	0.535	184 (17.1)	14 (17.9)	0.851	289 (24.8)	40 (28.6)	0.327	646 (19.4)	60 (22.6)	0.208
<b>Non-lobar ICH, n (%)</b>	541 (37.0)	18 (30.0)	0.268	546 (38.0)	20 (23.8)	0.009	408 (31.7)	48 (32.4)	0.861	1495 (35.7)	86 (29.5)	0.030
<b>Age, mean (SD), years</b>	57.6 (12.3)	59.5 (10.0)	0.110	57.9 (14.2)	64.7 (12.3)	<0.001	68.5 (12.8)	68.1 (12.4)	0.654	61.2 (14.1)	65.6 (12.4)	<0.001
<b>Female, n (%)</b>	677 (41.4)	46 (69.7)	<0.001	578 (35.7)	57 (58.2)	<0.001	668 (42.4)	117 (62.2)	<0.001	1923 (39.8)	220 (62.5)	<0.001
<b>BMI, mean (SD)</b>	30.1 (7.4)	31.2 (8.6)	.398	29.8 (6.4)	30.8 (5.9)	0.042	28.0 (6.6)	29.1 (7.4)	0.076	29.3 (6.9)	30.0 (7.3)	0.149
<b>Prior Stroke, n (%)</b>	71 (4.3)	10 (15.2)	<0.001	78 (4.8)	14 (14.3)	<0.001	66 (4.2)	12 (6.4)	0.167	215 (4.5)	36 (10.2)	<0.001
<b>Hypertension, n (%)</b>	1145 (70.1)	55 (83.3)	0.021	950 (58.6)	77 (78.6)	<0.001	951 (60.4)	116 (61.7)	0.726	3046 (63.1)	248 (70.5)	0.005
<b>Diabetes, n (%)</b>	356 (21.8)	23 (34.8)	0.012	441 (27.2)	49 (50.0)	<0.001	268 (17.0)	48 (25.)	0.004	1065 (22.0)	120 (34.1)	<0.001
<b>High Cholesterol, n (%)</b>	598 (36.6)	45 (68.2)	<0.001	661 (40.8)	66 (67.3)	<0.001	779 (49.5)	121 (64.4)	<0.001	2038 (42.2)	232 (65.9)	<0.001
<b>Heart Disease, n (%)</b>	174 (10.6)	12 (18.2)	0.055	176 (10.9)	25 (25.5)	<0.001	411 (26.1)	52 (27.7)	0.645	761 (15.8)	89 (25.3)	<0.001
<b>Depression, n (%)</b>	204 (12.5)	54 (81.8)	<0.001	270 (16.7)	82 (83.7)	<0.001	255 (16.2)	126 (67.0)	<0.001	729 (15.1)	262 (74.4)	<0.001
<b>Heavy Alcohol Use, n (%)</b>	188 (11.5)	6 (9.1)	0.545	172 (10.6)	7 (7.1)	0.275	183 (11.6)	9 (4.8)	0.005	543 (11.2)	22 (6.3)	0.003
<b>Prior Tobacco, n (%)</b>	911 (55.8)	38 (57.6)	0.770	727 (44.8)	56 (57.1)	0.018	841 (53.4)	109 (58.0)	0.234	2479 (51.3)	203 (57.7)	0.021
<b>Current Tobacco Use, n (%)</b>	473 (28.9)	20 (30.3)	0.812	228 (14.1)	12 (12.2)	0.614	203 (12.9)	18 (9.6)	0.195	904 (18.7)	50 (14.2)	0.035
<b>Illicit Drug Use, n (%)</b>	155 (9.5)	6 (9.1)	0.914	100 (6.2)	4 (4.1)	0.400	50 (3.2)	3 (1.6)	0.231	305 (6.3)	13 (3.7)	0.048
<b>Non-Aspirin Antiplatelet Use, n (%)</b>	47 (2.9)	5 (7.6)	0.028	56 (3.5)	12 (12.2)	<0.001	101 (6.4)	14 (7.4)	0.587	204 (4.2)	31 (8.8)	<0.001
<b>Aspirin Use, n (%)</b>	613 (37.5)	31 (47.0)	0.121	565 (34.9)	47 (48.0)	<0.001	767(48.7)	95 (50.5)	0.635	1945 (40.3)	173 (49.1)	0.001
<b>Anticoagulant Use, n (%)</b>	54 (3.3)	2 (3.0)	1	70 (4.3)	13 (13.3)	<0.001	165(10.5)	28 (14.9)	0.087	289 (6.0)	43 (12.2)	<0.001
<b>SNRI Use, n (%)</b>	14 (0.9)	1 (1.5)	0.575	24 (1.5)	0 (0.0)	0.225	54(3.4)	3 (1.6)	0.179	92 (1.9)	4 (1.1)	0.302
<b>SARI Use, n (%)</b>	16 (1.0)	5 (7.6)	<0.001	17 (1.0)	6 (6.1)	<0.001	23(1.5)	12 (6.4)	<0.001	56 (1.2)	23 (6.5)	<0.001
<b>NDRI Use, n (%)</b>	7 (0.4)	7 (10.6)	<0.001	11 (0.7)	5 (5.1)	<0.001	15(1.0)	10 (5.3)	<0.001	33 (0.7)	22 (6.3)	<0.001
<b>Tricyclic Antidepressant Use, n (%)</b>	11 (0.7)	3 (4.5)	<0.001	18 (1.1)	2 (2.0)	0.404	20(1.3)	3 (1.6)	0.710	49 (1.0)	8 (2.3)	0.029
<b>Tetracyclic Antidepressant Use, n (%)</b>	3 (0.2)	0 (0.0)	0.728	6 (0.4)	1 (1.0)	0.326	7(0.4)	3 (1.6)	0.047	16 (0.3)	4 (1.1)	0.019

<b>Presence of APOE e2, n (%)</b>	308 (18.8)	10 (15.2)	0.450	119 (7.3)	11 (11.2)	0.158	280(17.8)	29 (14.9)	0.325	707 (14.6)	49 (13.9)	0.713
<b>Presence of APOE e4, n (%)</b>	620 (37.9)	29 (43.9)	0.326	338 (20.9)	19 (19.4)	0.729	413(26.2)	55 (29.3)	0.373	1371 (28.4)	103 (29.3)	0.725

**Supplemental Table IV. Multivariable modeling of associations between pre-ICH SSRI use and ICH risk, stratified by race/ethnicity.** Regression models for ICH and subtypes were created for each race/ethnicity and adjusted for BMI, history of stroke, history of depression, history of heart disease, history of hypertension, high cholesterol, heavy alcohol use, use of street drugs. Presence of APOE2 and E4 alleles were included in lobar ICH models only. Significance was set at  $p < 0.05$ . Note: %, percent; CI, confidence interval; ICH, intracerebral hemorrhage; SSRI, selective serotonin reuptake inhibitor; OR, odds ratio.

New SSRI Use	Black		Hispanic		White	
	OR (95% CI)	p-value	OR (95% CI)	p-value	OR (95% CI)	p-value
<b>Any ICH location</b>	0.850 (0.445, 1.623)	0.622	0.513 (0.301, 0.875)	0.014	0.940 (0.658, 1.342)	0.733
<b>Lobar ICH</b>	0.696 (0.239, 2.026)	0.506	0.680 (0.327, 1.415)	0.303	1.065 (0.676, 1.678)	0.787
<b>Non-lobar ICH</b>	0.913 (0.452, 1.845)	0.800	0.398 (0.210, 0.753)	0.005	0.809 (0.523, 1.252)	0.342

**Supplemental Table V. Multivariable model of association between new, post-ICH SSRI user and 3-month ICH outcome (mRS<sub>≥3</sub>) stratified by race/ethnicity, including *a priori* covariates.** Regression models for each race/ethnicity was adjusted for the listed covariates. Significance was set at p< 0.05. Note: CI, confidence interval; GCS, Glasgow Coma Scale; ICH, intracerebral hemorrhage; IVH, intraventricular hemorrhage; mRS, modified Rankin score; OR, odds ratio; SSRI, selective serotonin reuptake inhibitor.

Predictor	Black		Hispanic		White	
	OR (95% CI)	p-value	OR (95% CI)	p-value	OR (95% CI)	p-value
New SSRI Use	1.713 (0.896, 3.276)	0.104	1.392 (0.714, 2.714)	0.332	1.770 (0.900, 3.480)	0.098
Age (per year)	1.038 (1.018, 1.059)	<0.001	1.047 (1.029, 1.065)	<0.001	1.044 (1.025, 1.064)	<0.001
Female	1.148 (0.760, 1.736)	0.512	1.933 (1.250, 2.992)	0.003	1.496 (0.938, 2.385)	0.090
Prior Stroke	2.838 (1.336, 6.026)	0.007	1.453 (0.672, 3.146)	0.343	1.667 (0.780, 3.560)	0.187
Diabetes	1.131 (0.697, 1.834)	0.619	1.723 (1.092, 2.718)	0.019	1.339 (0.771, 2.326)	0.300
History of Depression	1.551 (0.863, 2.788)	0.142	1.346 (0.771, 2.350)	0.295	1.479 (0.867, 2.523)	0.151
Post-ICH Depression	1.665 (0.530, 5.233)	0.383	1.159 (0.278, 4.829)	0.840	1.200 (0.257, 5.593)	0.817
Pre-ICH mRS $\geq 3$	7.129 (2.363, 21.505)	<0.001	5.966 (1.370, 25.978)	0.017	4.427 (1.602, 12.239)	0.004
Lobar Location	0.316 (0.175, 0.568)	<0.001	0.378 (0.215, 0.663)	<0.001	0.412 (0.246, 0.691)	<0.001
ICH Volume (per mL)	1.046 (1.026, 1.066)	<0.001	1.053 (1.034, 1.072)	<0.001	1.032 (1.015, 1.048)	<0.001
IVH Present	1.010 (0.661, 1.544)	0.964	1.345 (0.869, 2.083)	0.189	1.353 (0.834, 2.195)	0.221
Initial GCS (per point increase)	0.894 (0.836, 0.956)	0.001	0.901 (0.837, 0.969)	0.005	0.876 (0.795, 0.965)	0.008
Discharge mRS $\geq 3$	3.615 (2.179, 5.997)	<0.001	5.137 (3.098, 8.519)	<0.001	10.542 (5.666, 19.616)	<0.001