502   Online Supplement

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504   Association of Blood Pressure and Cognition after Stroke

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BASIC Study Blood Pressure Protocol

Blood Pressure Device

Blood pressure (BP) will be measured using a standard automated BP measurement arm monitor (*OmROn* model 700 series; Omron, Mannheim, Germany), that has been validated by the Association for the Advancement of Medical Instrumentation to be accurate. If the arm circumference is less than or equal to 17 inches, then the blood pressure will be measured with the regular/large adult cuff placed at the upper arm. If the arm circumference is greater than 17 inches, then the blood pressure will be measured with the regular/large adult cuff placed at the forearm.

Blood Pressure Measurement

Following a 5-minute rest, blood pressure will be measured in the right arm of seated participants at three 15-second intervals using an appropriately sized cuff. Whenever possible, the participant will be seated in a chair, with legs supported uncrossed on the ground, back supported by the chair, arm supported on a table/pillows and resting at heart level (elbow should be resting out straight supported at mid-chest level – or somewhere between shoulders and nipple level). Tobacco use, strenuous physical activity and intake of caffeine and alcohol are proscribed for 1 hour before measurement. We will record the arm of measurement (left/right), the 3 BP readings, patient position (sitting or lying down), and the measurement location (upper arm or forearm).

Supplemental Table 1: Fully Adjusted Differences in Cognition 90 days after Stroke by Covariates: Brain Attack Surveillance in Corpus Christi Project, 2011-2013

Coefficient	Estimates (95% Confidence Intervals)			
	3MSE (n=432)	AFT (n=431)	Trails A (n=335)	Trails B (n=283)
SBP per 10 mmHg increase	-0.01 (-0.05, 0.04) P=0.74	-0.03 (-0.22, 0.15) P=0.72	-0.003 (-0.02, 0.01) P=0.68	-0.005 (-0.01, 0.001) P=0.10
DBP per 10 mmHg increase	0.06 (-0.03, 0.15) P=0.17	0.13 (-0.24, 0.51) P=0.48	0.01 (-0.02, 0.04) P=0.46	0.01 (0.0001, 0.03) P=0.05
Age per 1 year increase	-0.022 (-0.029, -0.015) P<0.001	-0.04 (-0.07, -0.01) P=0.005	-0.007 (-0.009, -0.005) P <0.001	-0.002 (-0.003, -0.001) P <0.001
Education				
<High school	Referent	Referent	Referent	Referent
High school graduate vs <high school	0.36 (0.19, 0.54) P<0.001	0.98 (0.25, 1.71) P=0.009	0.06 (0.01, 0.11) P=0.03	0.03 (0.005, 0.06) P=0.02
>High school	0.63 (0.45, 0.80) P<0.001	1.24 (0.51, 1.97) P=0.001	0.06 (0.01, 0.17) P=0.03	0.04 (0.01, 0.06) P=0.007
Race/ethnicity				
Non-Hispanic white	Referent	Referent	Referent	Referent
Mexican American	-0.34 (-0.50, -0.17) P <0.001	-0.71 (-1.40, -0.02) P =0.04	-0.06 (-0.10, -0.01) P=0.02	-0.02 (-0.04, -0.0004) P=0.05
Other	-0.67 (-0.93, -0.41) P <0.001	-1.64 (-2.72, -0.56) P =0.003	-0.06 (-0.14, 0.01) P=0.10	-0.04 (-0.08, -0.002) P=0.04
Body mass index per 1 unit increase	0.02 (0.01, 0.03) P <0.001	0.05 (-0.003, 0.10) P =0.07	0.003 (0, 0.007) P=0.06	0.002 (0.0003, 0.003) P=0.02
Diabetes	-0.25 (-0.40, -0.11) P <0.001	-0.28 (-0.91, 0.35) P=0.39	-0.07 (-0.11, -0.03) P=0.002	-0.03 (-0.05, -0.008) P=0.007
NIH Stroke Scale score per 1 point increase	-0.19 (-0.27, -0.11) P <0.001	-0.45 (-0.79, -0.11) P =0.009	-0.03 (-0.06, -0.01) P=0.006	-0.01 (-0.02, 0.001) P=0.07
Depressive symptoms at 90 days per 1 point increase	-0.012 (-0.022, -0.001) P=0.03	-0.02 (-0.07, 0.02) P=0.26	-0.002 (-0.005, 0.001) P=0.28	-0.0002 (-0.002, 0.001) P=0.80

Abbreviations: SBP=systolic blood pressure. DBP=diastolic blood pressure.
The Modified Mini-Mental Status Examination (3MSE) assesses global cognitive function (scores range, 0-100). The 3MSE outcome was transformed using the natural logarithm and reverse coded to have participants with worse cognition having lower scores. The Animal Fluency Test (AFT) assesses executive function (complex cognitive processing), with scores representing the number of animals generated in 30 seconds (scores range 0-10). The Trailmaking Tests (Trails) A and B assess visuomotor tracking, information processing speed, divided attention, and cognitive flexibility (scores reflected task accuracy [0-25 correct items] divided by completion time [0-180 seconds for Trails A and 0-300 seconds for Trails B]. For all cognitive tests, higher scores indicate better performance. Depressive symptoms measured using PHQ-8.

Linear regression used for Modified Mini-Mental Status Examination and Trailmaking Tests A and B. Tobit regression used for Animal Fluency Test. Models included SBP, DBP, age, education, race/ethnicity, body mass index, diabetes, NIH stroke severity score at time of index stroke, and depressive symptoms at 90 days.

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Coefficient	Model 5 with SBP, DBP, and Socio-demographics, and Clinical Factors from Table 2 in Manuscript	Model 5 plus adherence to BP medication
Supplemental Table 2: Association between Blood Pressure, Adherence to Antihypertensive Medication, and Cognition 90 days after Stroke: Brain Attack Surveillance in Corpus Christi Project, 2011-2013		
Estimates (95% Confidence Intervals)		
Outcome: 3MSE (n=348)		
Difference per 10 mmHg increase in SBP	0.01 (-0.04, 0.06) P=0.61	0.01 (-0.04, 0.06) P=0.65
Difference per 10 mmHg increase in DBP	0.01 (-0.09, 0.10) P=0.92	0.01 (-0.09, 0.11) P=0.86
Adherent to BP medication	Not included	Referent
Nonadherent to BP medication	Not included	0.11 (-0.07, 0.30) P=0.23
Not prescribed BP medication	Not included	-0.13 (-0.37, 0.11) P=0.31
Outcome: Animal Fluency Test (n=347)		
Difference per 10 mmHg increase in SBP	0.01 (-0.20, 0.21) P=0.95	-0.02 (-0.22, 0.19) P=0.86
Difference per 10 mmHg increase in DBP	-0.02 (-0.43, 0.40) P=0.94	0.04 (-0.38, 0.46) P=0.85
Adherent to BP medication	Not included	Referent
Nonadherent to BP medication	Not included	-0.24 (-1.03, 0.54) P=0.54
Not prescribed BP medication	Not included	-1.05 (-2.06, -0.04) P=0.04
Outcome: Trails A (n=276)		
Difference per 10 mmHg increase in SBP	-0.003 (-0.02, 0.01) P=0.69	-0.004 (-0.02, 0.01) P=0.58
Difference per 10 mmHg increase in DBP	0.01 (-0.02, 0.03) P=0.66	0.01 (-0.02, 0.04) P=0.54
Adherent to BP medication	Not included	Referent

Nonadherent to BP medication	Not included	-0.02 (-0.08, 0.03) *P*=0.40
Not prescribed BP medication	Not included	-0.04 (-0.11, 0.02) *P*=0.22
Outcome: Trails B (n=229)		
Difference per 10 mmHg increase in SBP	-0.004 (-0.01, 0.003) *P*=0.27	-0.004 (-0.01, 0.003) *P*=0.27
Difference per 10 mmHg increase in DBP	0.01 (-0.01, 0.02) *P*=0.40	0.01 (-0.01, 0.02) *P*=0.39
Adherent to BP medication	Not included	Referent
Nonadherent to BP medication	Not included	-0.003 (-0.03, 0.02) *P*=0.84
Not prescribed BP medication	Not included	-0.0004 (-0.03, 0.03) *P*=0.98

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