DATA SUPPLEMENT

High pulse pressure impairs cerebral artery endothelial function in young, but not old, mice

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Supplemental Table 1. Posterior cerebral artery characteristics

Variable	Young	Old	p-value
Max Diameter (μm) (n=20,14)	147 ± 17	150 ± 14	0.33
Spontaneous Tone (% maximal diameter)			
Static Pressure (n=20,14)	2 ± 4	8 ± 16	0.11
Low PP (n=17,8)	3 ± 4	4 ± 3	0.29
High PP (n=9,5)	3 ± 4	5 ± 6	0.29
Static - LNAME (n=7,6)	23 ± 12	50 ± 17	0.009 *
Low PP – LNAME (n=8,6)	32 ± 18	39 ± 12	0.23
High PP - LNAME (n=8,5)	19 ± 17	14 ± 12	0.28
Static – Catalase (n=10,7)	6 ± 5	10 ± 7	0.12
Low PP – Catalase (n=9,8)	7 ± 9	8 ± 9	0.44
High PP – Catalase (n=8,6)	4 ± 5	5 ± 9	0.46

Data are mean ± SD. PP, pulse pressure. Independent samples t-test with one-tailed p-values displayed. *p<0.05 vs. young vs. old.

Supplemental Table 2. Posterior cerebral artery sensitivity to vasodilators

EC_{50}	Young	Old	p-value
EC_{50} to acetylcholine (log M)			
Static Pressure (n=20,14)	-6.6 ± 0.6	-6.9 ± 1.2	0.25
Low PP (n=17,8)	-6.7 ± 0.9	-6.9 ± 0.2	0.24
High PP (n=9,5)	-7.3 ± 0.6	-7.4 ± 1.1	0.46
Static – LNAME (n=7,6)	-5.6 ± 1.5	-5.7 ± 0.6	0.25
Low PP – LNAME (n=8,6)	-6.4 ± 1.4	-6.8 ± 1.5	0.33
High PP – LNAME (n=8,5)	-6.9 ± 0.9	-6.1 ± 1.1	0.15
Static – Catalase (n=10,7)	-8.0 ± 0.8	-6.9 ± 0.9	0.09
Low PP – Catalase (n=9,8)	-6.8 ± 0.8	-7.2 ± 1.3	0.13
High PP – Catalase (n=8,6)	-6.5 ± 0.7	-6.66 ± 0.7	0.36
EC50 to sodium nitroprusside (log M)			
High PP (n=10,11)	-6.7 ± 0.4	-6.6 ± 0.8	0.31

Data are mean ± SD. PP, pulse pressure. Independent samples t-test with one-tailed p-values displayed.

Supplemental Table 3. Posterior cerebral artery pre-constriction

Pre-constriction (%)	Young	Old	p-value
Acetylcholine dose responses			
Static Pressure (n=20,14)	29 ± 9	30 ± 12	0.43
Low PP (n=17,8)	30 ± 10	28 ± 10	0.34
High PP (n=9,5)	26 ± 1	27 ± 3	0.38
Static – LNAME (n=7,6)	43 ± 12	43 ± 16	0.48
Low PP – LNAME (n=8,6)	46 ± 10	48 ± 10	0.38
High PP – LNAME (n=8,5)	45 ± 17	40 ± 9	0.25
Static – Catalase (n=10,7)	39 ± 8	35 ± 10	0.18
Low PP – Catalase (n=9,8)	34 ± 10	29 ± 6	0.12
High PP – Catalase (n=8,6)	33 ± 16	27 ± 8	0.21
Sodium nitroprusside dose response			
High PP (n=10,11)	29 ± 13	36 ± 16	0.15

Data are mean ± SD. PP, pulse pressure. Independent samples t-test with one-tailed p-values displayed.

Supplemental Table 4. Posterior cerebral artery distension during pulse pressure application

Variable	Young	Old	p=value
Low pulse pressure			
Absolute change in diameter (µm) (n=16,9)	6 ± 3	6 ± 2	0.41
Peterson's elastic modulus (mmHg) (n=16,9)	830 ± 509	571 ± 154	0.07
High pulse pressure			
Absolute change in diameter (µm) (n=16,9)	12 ± 5	8 ± 4	0.02 *
Peterson's elastic modulus (mmHg) (n=13,12)	777 ± 384	1292 ± 816	0.03 *

Data are mean ± SD. Absolute change in diameter: independent samples t-test. Peterson's elastic modulus: Mann-Whitney U test. One-tailed p-values displayed. *p<0.05 young vs. old.