Supplementary Table 3. Relationship between BP/BP excursions during EVT to values exceeding ±20% of the reference value and ischemic lesion volume (computed tomography scans)

Model	Systolic blood pressure		Mean arterial pressure	
	GMR (95% CI)	P	GMR (95% CI)	P
Full A: no interactions				
Default independent variables				
Rate of BP >120% of reference (by 1/10 min)	0.78 (0.62–0.96)	0.021	0.79 (0.66–0.93)	0.006
Rate of BP <80% of reference (by 1/10 min)	1.02 (0.83–1.26)	0.845	1.11 (0.89–1.39)	0.342
Reference BP (by 10 mm Hg)	1.00 (0.76–1.31)	0.989	0.79 (0.53–1.17)	0.242
Procedure mean BP (by 10 mm Hg)†	0.92 (0.70–1.20)	0.538	1.06 (0.71–1.57)	0.772
Procedure duration (by 10 min)	1.01 (0.95–1.08)	0.764	1.02 (0.95–1.08)	0.639
BP measurements taken (by 10)	1.07 (0.98–1.17)	0.119	1.08 (0.99–1.17)	0.098
On-admission NIHSS score (by 1 point)	1.05 (1.00–1.11)	0.037	1.05 (1.00–1.10)	0.036
TICI grade 2b-3 (vs. 0-2a)	0.46 (0.24–0.91)	0.026	0.51 (0.26–0.98)	0.044
Affected vessel: MCA1 vs. MCA2	0.71 (0.25–1.98)	0.508	0.81 (0.29–2.23)	0.677
Affected vessel: MCA1 vs. tandem occlusion	0.70 (0.34–1.42)	0.316	0.73 (0.37–1.45)	0.371
Collaterals ≥50% as unaffected side (vs. no)	0.35 (0.17–0.74)	0.006	0.37 (0.18–0.76)	0.007
Antihypertensives before EVT (vs. no)	1.41 (0.55–3.56)	0.471	1.30 (0.53–3.23)	0.565
Selected independent variables†				
Men (vs. women)	1.89 (1.08–3.32)	0.026	1.93 (1.11–3.34)	0.020
Model fit statistics (–2ResLL, AIC, BIC)	682.44, 712.44, 757.60		674.54, 704.54, 749.70	
Full B: with excursion*reference interactions				
Default independent variables				
Rate of BP >120% of reference (by 1/10 min)	0.73 (0.57–0.92)	0.008	0.74 (0.58–0.93)	0.011
Rate of BP <80% of reference (by 1/10 min)	1.11 (0.81–1.52)	0.500	1.16 (0.87–1.54)	0.317
Reference BP (by 10 mm Hg)	0.88 (0.66–1.16)	0.358	0.75 (0.49–1.14)	0.178
Rate of BP excursions >120%*reference BP	0.86 (0.77–0.96)	0.008	0.96 (0.87–1.06)	0.404
Rate of BP excursions <80%*reference BP	0.98 (0.92–1.04)	0.492	0.98 (0.91–1.07)	0.710
Procedure mean BP (by 10 mm Hg)†	0.99 (0.75–1.29)	0.919	1.11 (0.74–1.67)	0.616
Procedure duration (by 10 min)	1.01 (0.95–1.07)	0.800	1.01 (0.95–1.08)	0.682
BP measurements taken (by 10)	1.06 (0.97–1.16)	0.171	1.07 (0.98–1.17)	0.109
On-admission NIHSS score (by 1 point)	1.05 (1.00–1.10)	0.041	1.05 (1.00–1.10)	0.052
TICI grade 2b-3 (vs. 0-2a)	0.47 (0.24–0.92)	0.027	0.51 (0.26–0.99)	0.046
Affected vessel: MCA1 vs. MCA2	0.86 (0.31–2.40)	0.874	0.85 (0.30–2.37)	0.748
Affected vessel: MCA1 vs. tandem occlusion	0.61 (0.30–1.24)	0.170	0.73 (0.36–1.45)	0.367
Collaterals ≥50% as unaffected side (vs. no)	0.37 (0.18–0.77)	0.008	0.37 (0.18–0.76)	0.007
Antihypertensives before EVT (vs. no)	1.50 (0.60–3.76)	0.380	1.33 (0.53–3.32)	0.539
Selected independent variables†				
Men (vs. women)	1.88 (1.08–3.29)	0.026	1.91 (1.09–3.34)	0.024
Model fit statistics (–2ResLL, AIC, BIC)	693.63, 727.63, 778.58		691.64, 725.64, 776.59	
Full C: with excursions*TICI interactions				
Rate of BP >120% of reference*TICI grade	1.04 (0.75–1.44)	0.818	1.09 (0.81–1.48)	0.550
Rate of BP >120% at TICI 0-2a	0.71 (0.50–1.02)	-	0.85 (0.63–1.15)	-
Rate of BP >120% at TICI 2b-3	0.73 (0.57–0.94)	-	0.77 (0.65–0.93)	-
Rate of BP <80% of reference*TICI grade	0.87 (0.64–1.18)	0.365	0.87 (0.61–1.25)	0.456
Rate of BP <80% at TICI 0-2a	0.95 (0.70–1.27)	-	1.00 (0.70–1.42)	-
Rate of BP <80% at TICI 2b-3	1.06 (0.85–1.33)	-	1.15 (0.90–1.46)	-

Supplementary Table 3. Continued

Model	Systolic blood pressure		Mean arterial pressure	
	GMR (95% CI)	P	GMR (95% CI)	P
TICI grade 2b-3 (vs. 0-2a)	0.45 (0.23–0.90)	0.023	0.50 (0.25–0.96)	0.039
Reference BP (by 10 mm Hg)	1.01 (0.77–1.32)	0.961	0.80 (0.54–1.20)	0.284
Procedure mean BP (by 10 mm Hg)[†] (other effects were closely similar to A and B)	0.92 (0.70–1.21)	0.539	1.04 (0.70–1.55)	0.827
Model fit statistics (-2ResLL, AIC, BIC)	685.14, 719.14, 770.09		676.94, 710.94, 761.89	
Full D: with BP*TICI interactions				
Rate of BP >120% of reference (by 1/10 min)	0.72 (0.57–0.92)	0.009	0.79 (0.66–0.94)	0.007
Rate of BP <80% of reference (by 1/10 min)	1.00 (0.83–1.27)	0.809	1.11 (0.88–1.39)	0.372
TICI grade 2b-3 (vs. 0-2a)	0.48 (0.25–0.94)	0.033	0.51 (0.26–1.00)	0.050
Reference BP*TICI grade	0.92 (0.67–1.26)	0.619	0.91 (0.56–1.47)	0.704
Reference BP at TICI 0-2a	0.95 (0.68–1.33)	-	0.75 (0.46–1.22)	-
Reference BP at TICI 2b-3	1.03 (0.77–1.39)	-	0.82 (0.52–1.28)	-
Procedure mean*BP TICI grade	1.02 (0.66–1.58)	0.916	1.00 (0.54–1.86)	0.998
Procedure mean BP at TICI 0-2a	0.93 (0.61–1.41)	-	1.05 (0.59–1.86)	-
Procedure mean BP at TICI 2b-3 (other effects were closely similar to A and B)	0.91 (0.67–1.22)	-	1.05 (0.67–1.63)	-
Model fit statistics (-2ResLL, AIC, BIC)	694.74, 728.74, 779.69		685.49, 719.49, 770.44	
Reduced[§]				
Default independent variables				
Rate of BP >120% of reference (by 1/10 min)	0.72 (0.60–0.87)	<0.001	0.75 (0.63–0.90)	0.002
Rate of BP <80% of reference (by 1/10 min)	1.06 (0.91–1.25)	0.443	1.10 (0.93–1.31)	0.265
Reference BP (by 10 mm Hg)	1.01 (0.85–1.19)	0.911	0.86 (0.69–1.07)	0.181
Rate of BP excursions >120%*reference BP	0.86 (0.78–0.96)	0.006	0.95 (0.86–1.04)	0.264
On-admission NIHSS score (by 1 point)	1.06 (1.01–1.11)	0.014	1.06 (1.01–1.10)	0.021
TICI grade 2b-3 (vs. 0-2a)	0.36 (0.20–0.67)	0.001	0.36 (0.20–0.67)	0.042
Affected vessel: MCA1 vs. other	0.65 (0.36–1.17)	0.153	0.72 (0.40–1.29)	0.270
Collaterals ≥50% as unaffected side (vs. no)	0.33 (0.16–0.68)	0.002	0.33 (0.16–0.67)	0.003
Selected independent variables[‡]				
Men (vs. women)	1.84 (1.07–3.17)	0.028	1.78 (1.03–3.07)	0.038
Model fit statistics (-2ResLL, AIC, BIC)	666.00, 688.00, 721.41		666.27, 688.27, 721.68	

Two types of models (each separately for systolic and mean arterial pressure) were fitted: "full" (with different interaction terms) and "reduced" (effects based on biological and statistical plausibility). Effects are GMRs (lesion volume was ln-transformed). GMRs for the interaction terms indicate whether the BP excursion effects were conditional on reference BP; or whether BP excursion effects and the effects of reference and procedure mean BP were conditional on the level of reperfusion (TICI grade).

BP, blood pressure; EVT, endovascular thrombectomy; GMR, geometric means ratio; CI, confidence interval; NIHSS, National Institutes of Health Stroke Scale; TICI, Thrombolysis in Cerebral Infarction; MCA, middle cerebral artery (segment 1 or 2); -2ResLL, 2 residual logarithmic likelihood; AIC, Akaike information criterion; BIC, Bayesian information criterion.

*The asterisk is a part of the interaction term; [†]Weighted mean as area under the BP-time curve divided by the time period covered; [‡]By stepwise selection procedure (P<0.200 to enter/stay) among: age, sex, comorbidities, use of sympathomimetics during EVT, stroke etiology, time since symptom onset till the first vessel image, use of recombinant tissue plasminogen activator, pre-index stroke statin, antiplatelet or anticoagulant use; [§]Reduced model excluded interaction terms if no indication of moderation (for either systolic BP or mean arterial pressure), use of antihypertensives before EVT (highly insignificant and small number of treated patients), procedure mean BP (highly insignificant, determined by excursion rates, see Supplementary Analysis of Blood Pressure), procedure duration and number of BP measurements taken (highly insignificant). Affected vessel was dichotomized (MCA1/other).