

Supplementary Material 2

This supplementary material presents methods and results of analysis of the correlations between four haemodynamic parameters and clinical treatment outcomes through use of a binary logistic regression model.

Method:

A binary logistic regression model was constructed to evaluate the relationship between flow-diversion outcome (*i.e.* aneurysm occlusion) and each of the four haemodynamic parameters – IR, EL, AAV, and WSS. Calibration of the model (*i.e.* statistical precision) was assessed by the Hosmer-Lemeshow goodness-of-fit test, with $p > 0.05$ being an indication of that the model has a high predictive ability (*i.e.* no statistical difference between observed and expected values). All analyses were performed using MedCalc version 19.1 (Ostend, Belgium).

Results:

Figure S2-1 shows the logistic regression curves corresponding to the four haemodynamic parameters investigated, and **Table S2-1** presents the statistical results of each analysis. Logistic regression analyses revealed that IR (OR: 0.9468, 95% CI: 0.8976 to 0.9987, $p = 0.0208$) and EL (OR: 0.9389, 95% CI: 0.8766 to 1.0057, $p = 0.0171$) better predict aneurysm occlusion, in contrast to AAV ($p = 0.2628$) and WSS ($p = 0.8075$), which is in agreement with the findings of our meta-analysis.

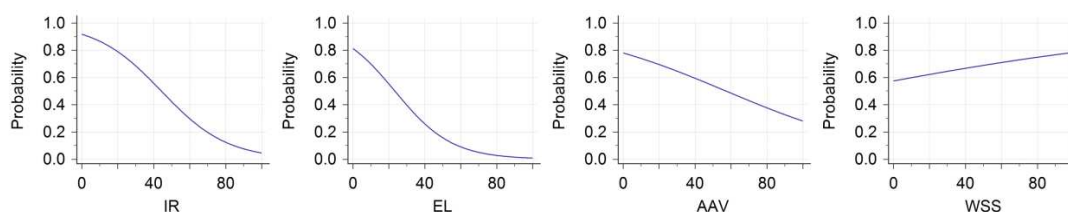


Figure S2-1. Binary logistic regression curves of IR, EL, AAV, and WSS in relation to the clinical outcomes after flow-diversion intervention. IR: inflow rate; EL: energy loss; AAV: intra-aneurysmal average velocity; and WSS: wall shear stress.

Table S2-1. Statistical results of the logistic regression of four haemodynamic parameters.

Parameters	Coeff.	SE	Wald	p value	Hosmer & Lemeshow test		OR	95% CI of OR
					χ^2	p value		
IR	-0.0546	0.0272	4.0292	0.0208 †	6.3114	0.5039	0.9468	0.8976 to 0.9987
EL	-0.0630	0.0350	3.2324	0.0171 †	7.6540	0.3641	0.9389	0.8766 to 1.0057
AAV	-0.0221	0.0204	1.1749	0.2628	15.7943	0.0454 †	0.9781	0.9397 to 1.0180
WSS	0.0099	0.0407	0.0592	0.8075	7.3651	0.1178	1.0100	0.9325 to 1.0939

IR: inflow rate; EL: energy loss; AAV: intra-aneurysmal average velocity; WSS: wall shear stress; Coeff.: coefficient; SE: standard error; OR: odds ratio; and CI: confidence interval.

† suggestive of statistical significance ($p < 0.05$).