

Supplementary material

Ultrasonographic assessment of bypass capacity after revascularization surgery in moyamoya disease: a systematic review and single-arm meta-analysis

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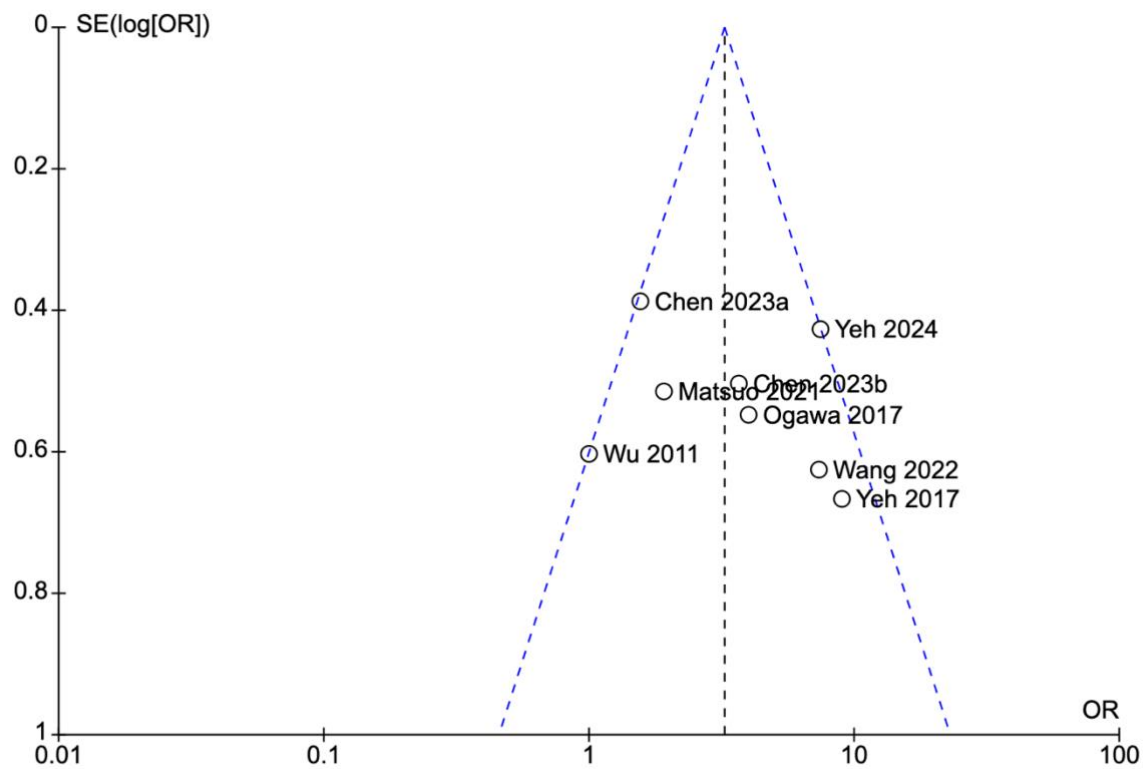
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Supplementary Table 1 The included studies and their quality rating using the modified Newcastle-Ottawa Scale. DSA – digital subtraction angiography.

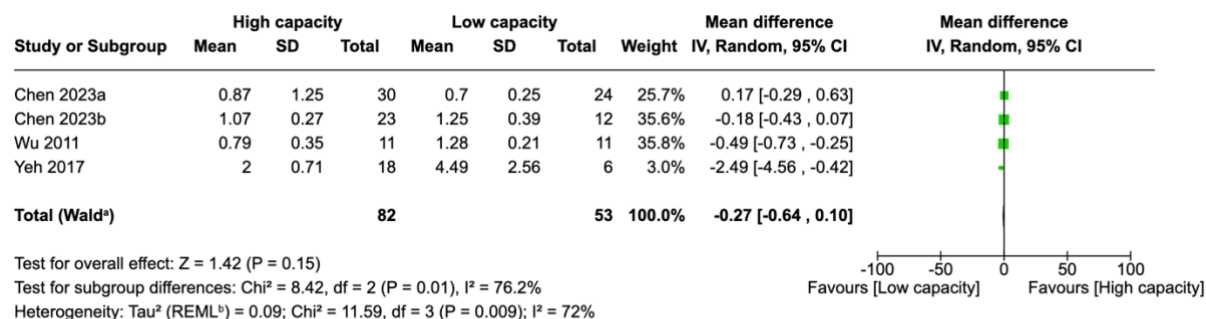
Study	Selection				Comparability		Outcome			Total score	Rating
	Representativeness of the exposed cohort	Selection of the non exposed cohort	Ascertainment of exposure	Demonstration that outcome of interest was not present at start of study	Study controls (High capacity / Low capacity)	Study controls for any additional factor (ultrasound / DSA)	Assessment of outcome	Was follow-up time long enough for outcomes to occur (min. 14 days)	Adequacy of follow up of cohorts (loss-to-follow-up 20%)		
Yeh 2017	1	0	1	1	1	1	1	1	1	8/9	high quality
Wang 2022	1	0	1	1	1	1	1	1	1	8/9	high quality
Ogawa 2017	1	0	1	1	1	0	1	1	1	7/9	high quality
Matsuo 2021	1	0	1	1	1	0	1	1	1	7/9	high quality
Chen 2023a	1	0	1	1	1	0	1	1	1	7/9	high quality
Yeh 2024	1	0	1	1	1	1	1	1	1	8/9	high quality
Wu 2011	1	0	1	1	1	0	1	1	1	7/9	high quality
Chen 2023b	1	0	1	1	1	0	1	1	1	7/9	high quality

Supplementary Fig. 1 Funnel plot indicating publication bias of being present. SE – standard error; OR – odds ratio.



Forest plots for a timeframe of ≤ 2 weeks:

Supplementary Fig. 2 Forest plot showing that STA PI is a non-significant predictor of high bypass capacity within a timeframe of ≤ 2 weeks. STA – superficial temporal artery; PI – pulsatility index; IV – inverse variance; SD – standard deviation; CI – confidence interval.

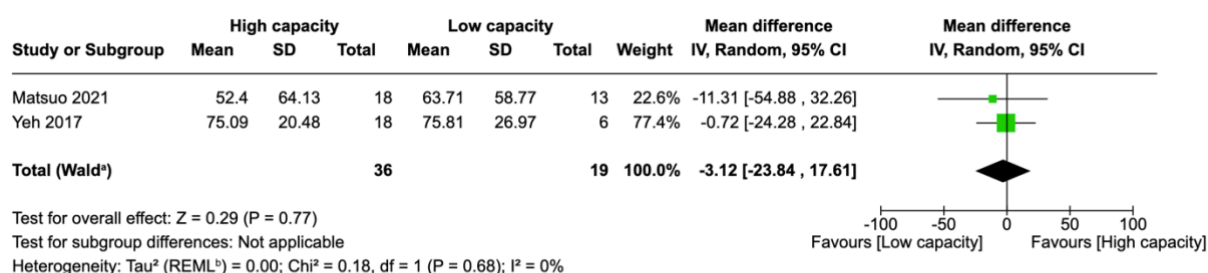


Footnotes

^aCI calculated by Wald-type method.

^b Tau^2 calculated by Restricted Maximum-Likelihood method.

Supplementary Fig. 3 Forest plot showing that ICA PSV is a non-significant predictor of high bypass capacity within a timeframe of ≤ 2 weeks. ICA – internal carotid artery; PSV – peak systolic velocity; IV – inverse variance; SD – standard deviation; CI – confidence interval.

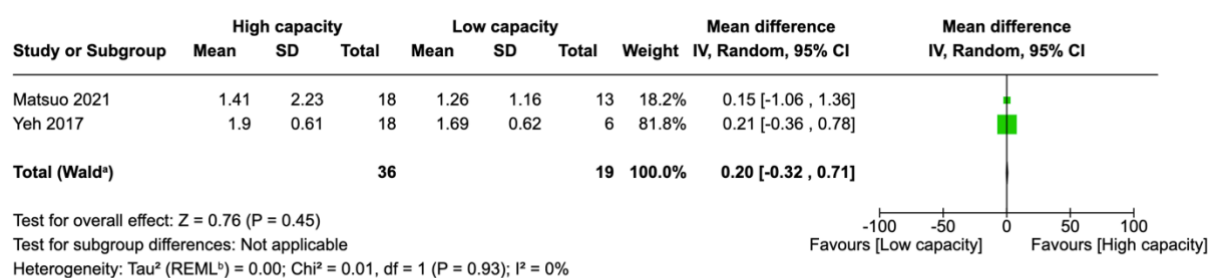


Footnotes

^aCI calculated by Wald-type method.

^b Tau^2 calculated by Restricted Maximum-Likelihood method.

Supplementary Fig. 4 Forest plot showing that ICA PI is a non-significant predictor of high bypass capacity within a timeframe of ≤ 2 weeks. ICA – internal carotid artery; PI – pulsatility index; IV – inverse variance; SD – standard deviation; CI – confidence interval.

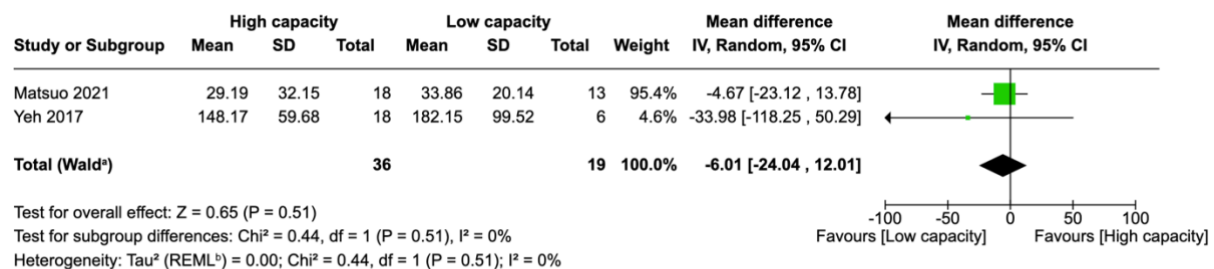


Footnotes

^aCI calculated by Wald-type method.

^b Tau^2 calculated by Restricted Maximum-Likelihood method.

Supplementary Fig. 5 Forest plot showing that ICA MFV is a non-significant predictor of high bypass capacity within a timeframe of ≤ 2 weeks. ICA – internal carotid artery; MFV – mean flow velocity; IV – inverse variance; SD – standard deviation; CI – confidence interval.

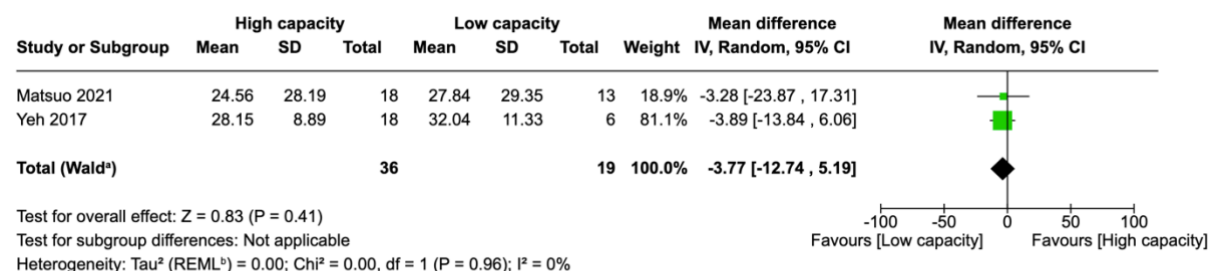


Footnotes

^aCI calculated by Wald-type method.

^b Tau^2 calculated by Restricted Maximum-Likelihood method.

Supplementary Fig. 6 Forest plot showing that ICA EDV is a non-significant predictor of high bypass capacity within a timeframe of ≤ 2 weeks. ICA – internal carotid artery; EDV – end diastolic velocity; IV – inverse variance; SD – standard deviation; CI – confidence interval.

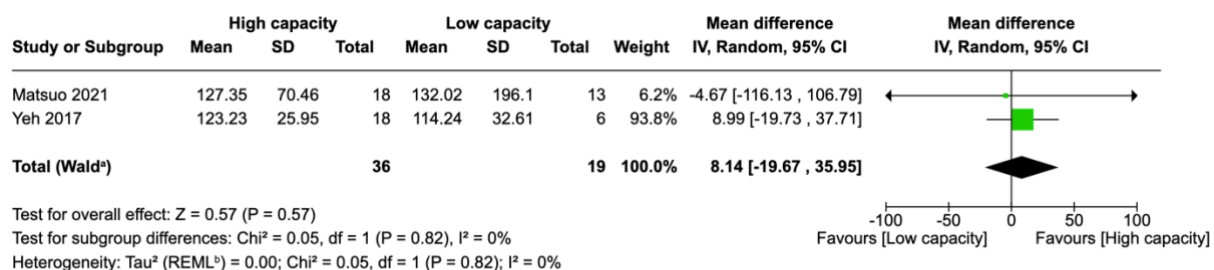


Footnotes

^aCI calculated by Wald-type method.

^b Tau^2 calculated by Restricted Maximum-Likelihood method.

Supplementary Fig. 7 Forest plot showing that ECA PSV is a non-significant predictor of high bypass capacity within a timeframe of ≤ 2 weeks. ECA – external carotid artery; PSV – peak systolic velocity; IV – inverse variance; SD – standard deviation; CI – confidence interval.

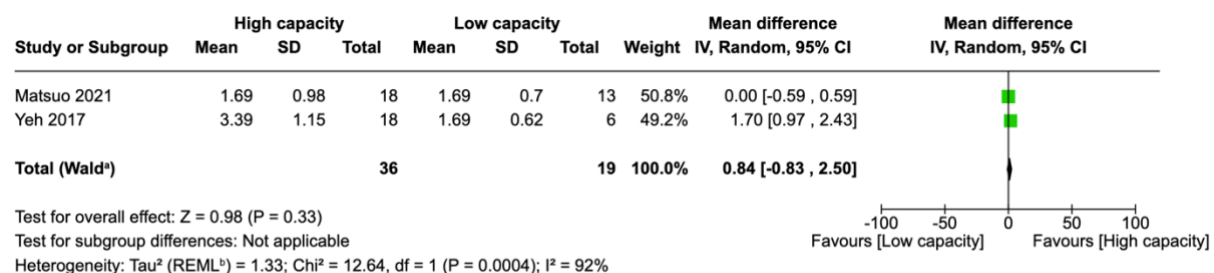


Footnotes

^aCI calculated by Wald-type method.

^b Tau^2 calculated by Restricted Maximum-Likelihood method.

Supplementary Fig. 8 Forest plot showing that ECA PI is a non-significant predictor of high bypass capacity within a timeframe of ≤ 2 weeks. ECA – external carotid artery; PI – pulsatility index; IV – inverse variance; SD – standard deviation; CI – confidence interval.

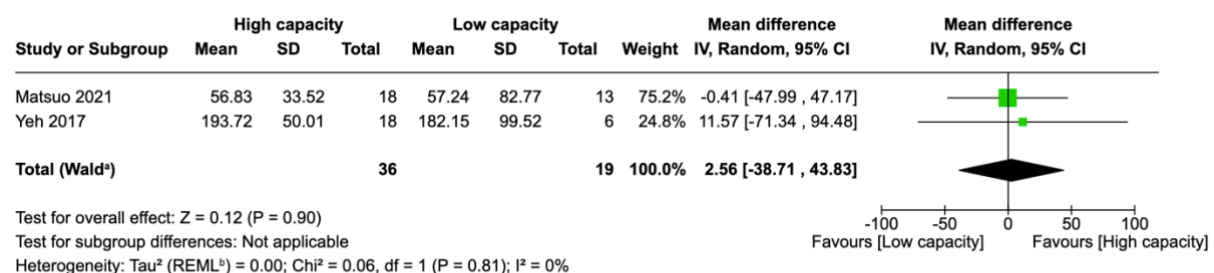


Footnotes

^aCI calculated by Wald-type method.

^b Tau^2 calculated by Restricted Maximum-Likelihood method.

Supplementary Fig. 9 Forest plot showing that ECA MFV is a non-significant predictor of high bypass capacity within a timeframe of ≤ 2 weeks. ECA – external carotid artery; MFV – mean flow velocity; IV – inverse variance; SD – standard deviation; CI – confidence interval.



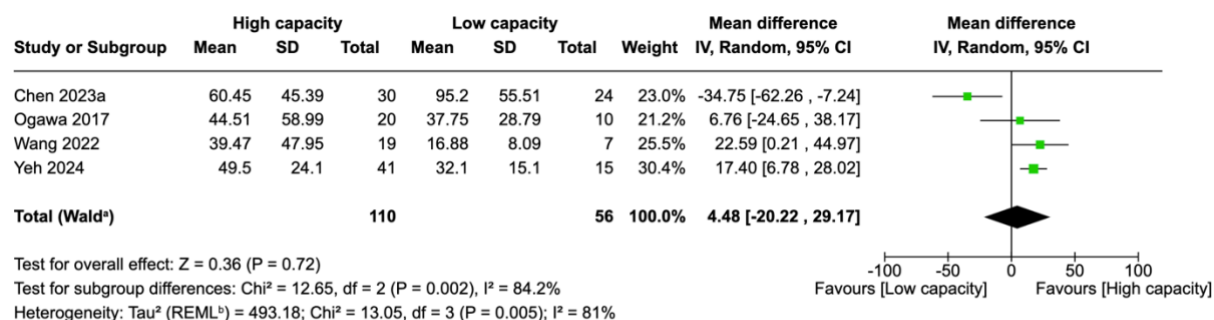
Footnotes

^aCI calculated by Wald-type method.

^b Tau^2 calculated by Restricted Maximum-Likelihood method.

Forest plots for a timeframe of 3 to 6 months:

Supplementary Fig. 10 Forest plot showing that STA MFV is a non-significant predictor of high bypass capacity within a timeframe of 3 to 6 months. STA – superficial temporal artery; MFV – mean flow velocity; IV – inverse variance; SD – standard deviation; CI – confidence interval.

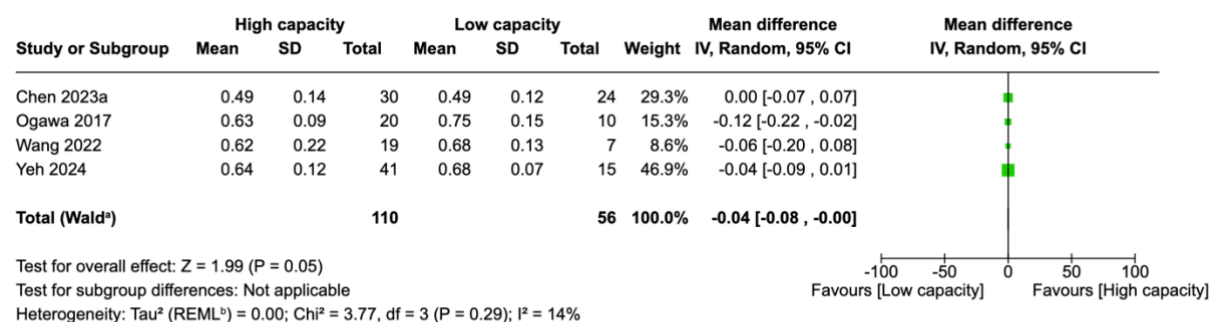


Footnotes

^aCI calculated by Wald-type method.

^b Tau^2 calculated by Restricted Maximum-Likelihood method.

Supplementary Fig. 11 Forest plot showing that STA RI is a non-significant predictor of high bypass capacity within a timeframe of 3 to 6 months. STA – superficial temporal artery; RI – resistance index; IV – inverse variance; SD – standard deviation; CI – confidence interval.

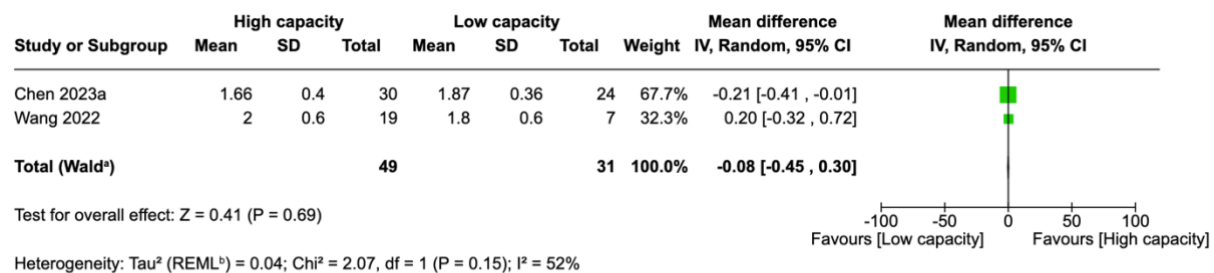


Footnotes

^aCI calculated by Wald-type method.

^b Tau^2 calculated by Restricted Maximum-Likelihood method.

Supplementary Fig. 12 Forest plot showing that STA diameter is a non-significant predictor of high bypass capacity within a timeframe of 3 to 6 months. STA – superficial temporal artery; IV – inverse variance; SD – standard deviation; CI – confidence interval.

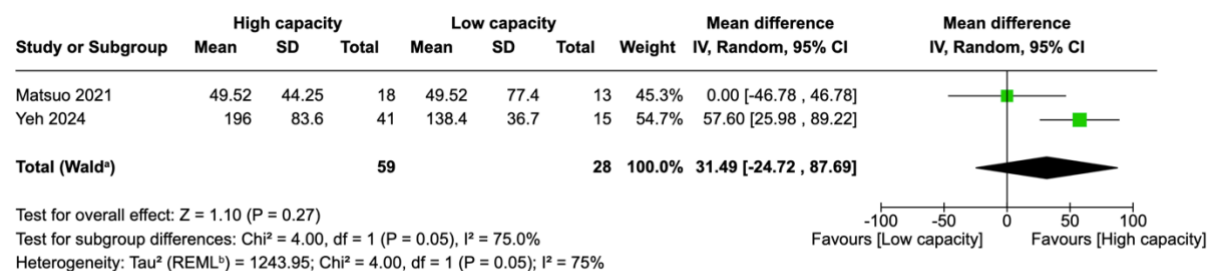


Footnotes

^aCI calculated by Wald-type method.

^b Tau^2 calculated by Restricted Maximum-Likelihood method.

Supplementary Fig. 13 Forest plot showing that ECA MFV is a non-significant predictor of high bypass capacity within a timeframe of 3 to 6 months. ECA – external carotid artery; MFV – mean flow velocity; IV – inverse variance; SD – standard deviation; CI – confidence interval.



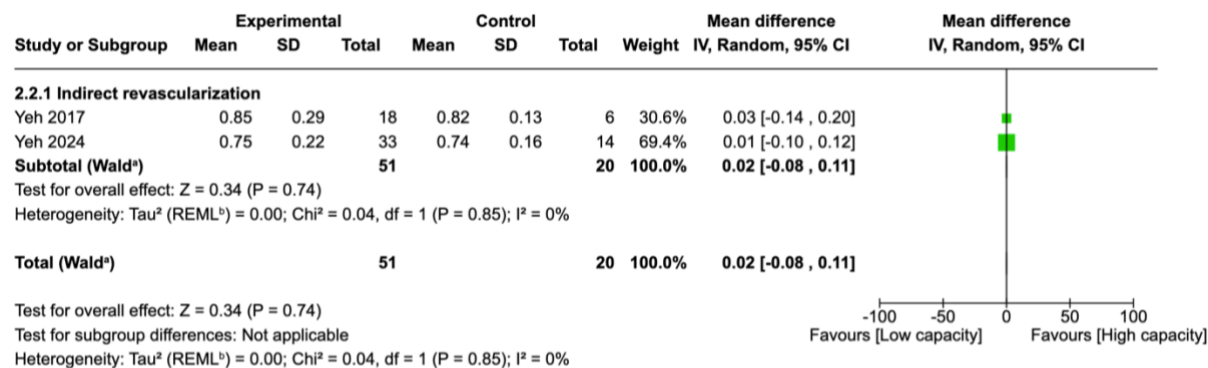
Footnotes

^aCI calculated by Wald-type method.

^b Tau^2 calculated by Restricted Maximum-Likelihood method.

Forest plots for a timeframe of 0 to 3 months:

Supplementary Fig. 14 Forest plot showing that ACA PI is a non-significant predictor of high bypass capacity within a timeframe of 3 to 6 months. ACA – anterior cerebral artery; PI – pulsatility index; IV – inverse variance; SD – standard deviation; CI – confidence interval.

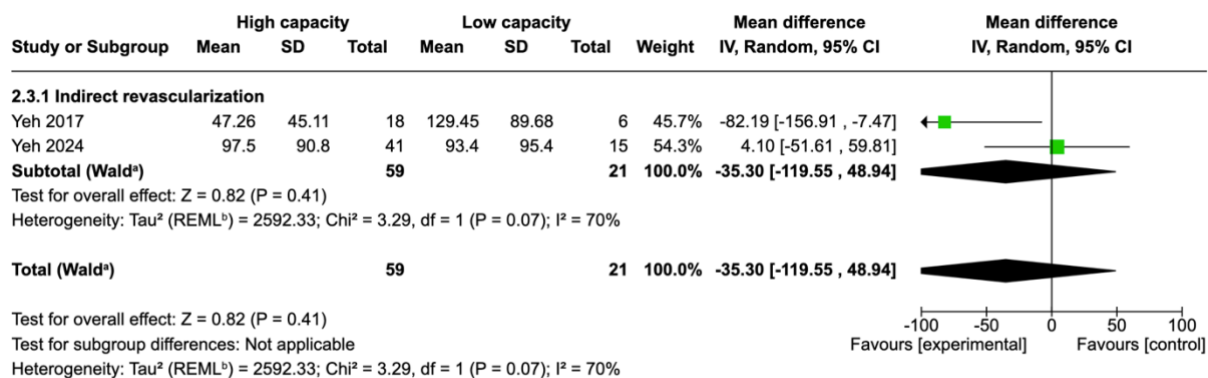


Footnotes

^aCI calculated by Wald-type method.

^bTau² calculated by Restricted Maximum-Likelihood method.

Supplementary Fig. 15 Forest plot showing that MCA MFV is a non-significant predictor of high bypass capacity within a timeframe of 3 to 6 months. MCA – middle cerebral artery; MFV – mean flow velocity; IV – inverse variance; SD – standard deviation; CI – confidence interval.

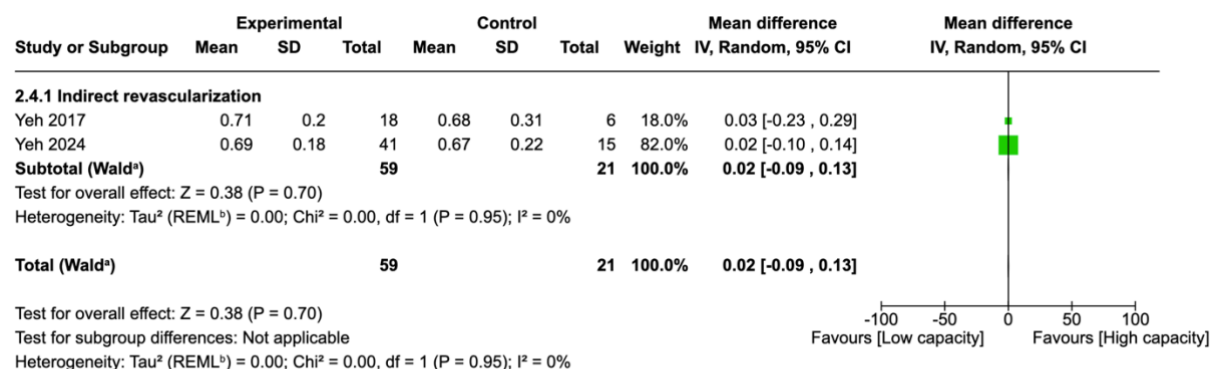


Footnotes

^aCI calculated by Wald-type method.

^bTau² calculated by Restricted Maximum-Likelihood method.

Supplementary Fig. 16 Forest plot showing that MCA PI is a non-significant predictor of high bypass capacity within a timeframe of 3 to 6 months. MCA – middle cerebral artery; PI – pulsatility index; IV – inverse variance; SD – standard deviation; CI – confidence interval.

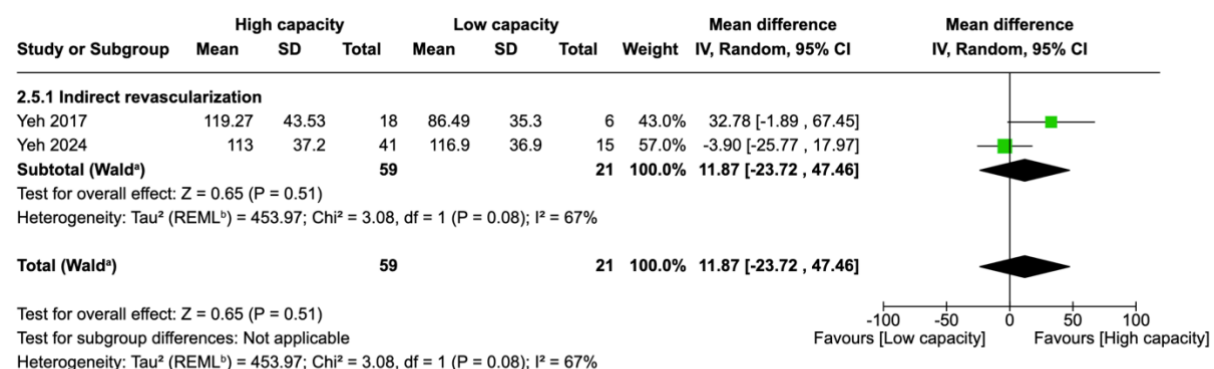


Footnotes

^aCI calculated by Wald-type method.

^bTau² calculated by Restricted Maximum-Likelihood method.

Supplementary Fig. 17 Forest plot showing that PCA MFV is a non-significant predictor of high bypass capacity within a timeframe of 3 to 6 months. PCA – posterior cerebral artery; MFV – mean flow velocity; IV – inverse variance; SD – standard deviation; CI – confidence interval.

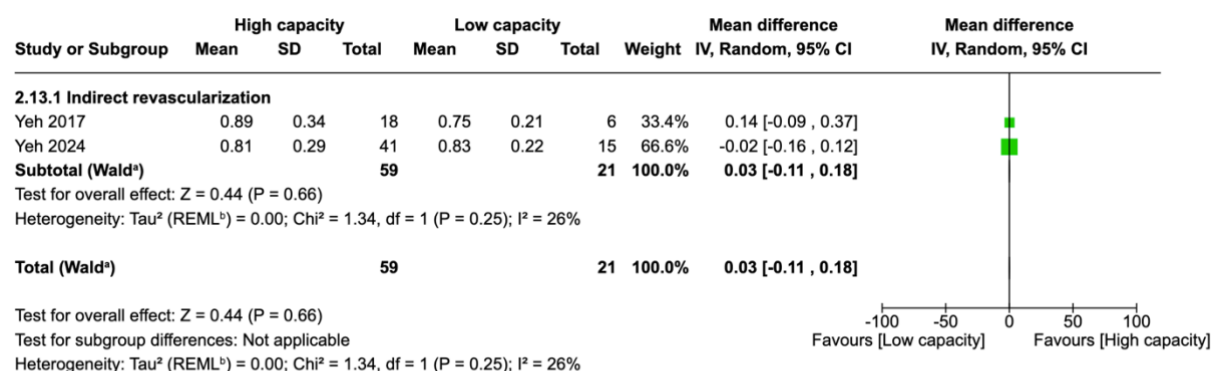


Footnotes

^aCI calculated by Wald-type method.

^bTau² calculated by Restricted Maximum-Likelihood method.

Supplementary Fig. 18 Forest plot showing that PCA PI is a non-significant predictor of high bypass capacity within a timeframe of 3 to 6 months. PCA – posterior cerebral artery; PI – pulsatility index; IV – inverse variance; SD – standard deviation; CI – confidence interval.



Footnotes

^aCI calculated by Wald-type method.

^bTau² calculated by Restricted Maximum-Likelihood method.