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ESO and ESMINT Guideline on Acute Management of Basilar Artery Occlussion

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on behalf of the MWG

May 16th, ESOC 2024 Basel

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DSMB: ENDOLOW

Financial Disclosures*: Daniel Strbian

Study grants from Boehringer Ingelheim (< 10K)

Advisory Board: Astra-Zeneca, Alexion, CSL Behring, BMS, Orion, Boehringer Ingelheim

*All paid to Institution

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Disclosures

Intellectual Disclosures: Wim van Zwam

(Co-) P.I. of MrClean and MrClean-Late

DSMB: chair of WeTrust, ANAIS, InExtremis (LASTE and MOSTE)

Financial Disclosures*: Wim van Zwam

Study grants from Dutch Heart Foundation, Dutch Brain council, Stryker, Medtronic, Penumbra, Cerenovus

Speaker fees from Stryker, Medtronic, Cerenovus, Nicolab, Microvention, Philips

*All paid to Institution

Disclosures of all MWG member

Intellectual Disclosures:

Please see the publication

Financial Disclosures:

Please see the publication

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IVT for BAO

PICO 1: For adults with BAO-related acute ischaemic stroke presenting within 24 hours from the time last known well, does intravenous thrombolysis (IVT) alone compared to no IVT improve outcomes?

Evidence-based Recommendation

For adults with BAO-related acute ischaemic stroke presenting within 24 hours from the time last known well, there are insufficient data to make an evidence-based recommendation on the use of IVT.

Please see the Expert Consensus Statement below.

Quality of evidence:

Strength of recommendation:

Expert Consensus Statement

IVT for BAO

- For adults with BAO-related acute ischaemic stroke presenting within 4.5 hours from the time last known well without contraindications for IVT and without extensive ischemic changes in the posterior circulation*, 10/10 MWG members suggest intravenous thrombolysis rather than no intravenous thrombolysis (please also see PICO 5 and 7).

*extensive bilateral and/or brainstem ischemic changes

Expert Consensus Statement

IVT for BAO

- For adults with BAO-related acute ischaemic stroke presenting between 4.5 and 12 hours from the time last known well without contraindications for IVT (apart from the time window) and without extensive ischemic changes in the posterior circulation*, 8/10 MWG members suggest intravenous thrombolysis rather than no intravenous thrombolysis (please also see PICO 5 and 7).

- For adults with BAO-related acute ischaemic stroke presenting between 12 and 24 hours from the time last known well without contraindications for IVT (apart from the time window) and without extensive ischemic changes in the posterior circulation*, 8/10 MWG members suggest intravenous thrombolysis rather than no intravenous thrombolysis (please also see PICO 5 and 7).

Supporting information

IVT for BAO

- Non-randomised studies of IVT-only treated patients with BAO

  median NIHSS 18 / OTT: 50% 0-6h, 19% 6-12h, 31% >12h

  mRS 0-3 in 47% / sICH ~ 9% as in RCT (using the same sICH criteria)

- The BASICS registry: mRS 0-2 was more frequent after IVT compared to the conventional treatment

  unadjusted OR 1.83 (1.10-3.06).

- ESO IVT guidelines

Neurology 2024;102:e209249

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EVT in 0-6 hour time window

PICO 2W

PICO 2: For adults with BAO-related acute ischemic stroke within 6 hours of symptoms onset, does endovascular treatment (EVT) plus BMT compared with BMT alone improve outcomes?

Evidence-based Recommendation

For adults with BAO-related acute ischaemic stroke presenting within 6 hours from the time last seen well, **we suggest EVT plus BMT over BMT alone***.
The recommendation considers only patients with NIHSS ≥ 10 (please see also PICO 4)

Quality of evidence: **Very low** ⊕
Strength of recommendation: **Weak for intervention** ↑?

** The effect of treatment depends on use of IVT in BMT group, with greater benefit of EVT seen in those trials with lesser use of IVT. Actually, much of this evidence comes from Asian trials with high prevalence of ICAD, and in which BMT often comprises conventional therapy only (antiaggregatory and anticoagulation). For imaging criteria, please refer to PICO 5.*

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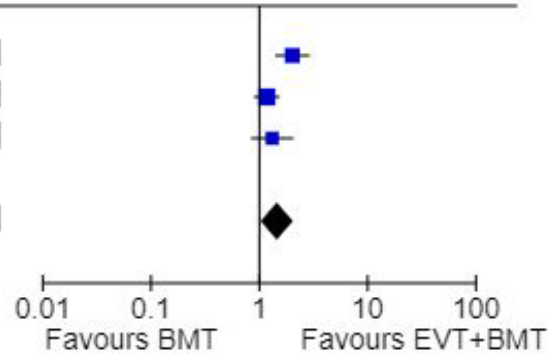
Evidence mRS 0-3

PICO 2

Study or Subgroup	Endovascular thrombectomy plus best medical management Events	Total	Best medical management Events	Total	Weight	Risk ratio IV, Random, 95% CI
ATTENTION RCT	104	226	26	114	32.9%	2.02 [1.40 , 2.91]
BASICS RCT	68	154	55	146	39.4%	1.17 [0.89 , 1.54]
BEST RCT	28	66	21	65	27.6%	1.31 [0.84 , 2.06]
Total (95% CI)		**446**		**325**	**100.0%**	**1.45 [1.03 , 2.04]**
Total events:	200		102			

Heterogeneity: Tau² = 0.06; Chi² = 5.52, df = 2 (P = 0.06); I² = 64%
Test for overall effect: Z = 2.11 (P = 0.04)
Test for subgroup differences: Not applicable



Domains:
D1: Bias arising from the randomization process.
D2: Bias due to deviations from intended intervention.
D3: Bias due to missing outcome data.
D4: Bias in measurement of the outcome.
D5: Bias in selection of the reported result.

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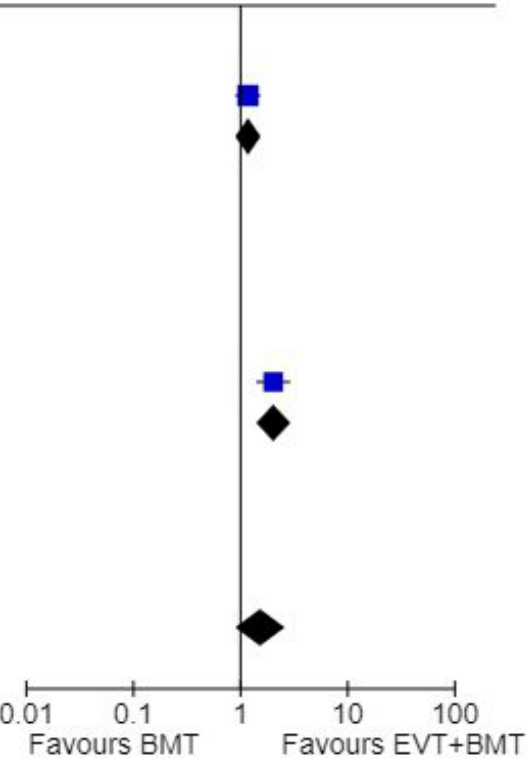
Evidence mRS 0-3

PICO 2

Study or Subgroup	Endovascular thrombectomy plus best medical management Events	Total	Best medical management Events	Total	Weight	Risk ratio IV, Random, 95% CI
1.1 IVT high						
BASICS RCT	68	154	55	146	52.6%	1.17 [0.89 , 1.54]
Subtotal (95% CI)		**154**		**146**	**52.6%**	**1.17 [0.89 , 1.54]**
Total events:	68		55			
Heterogeneity: Not applicable						
Test for overall effect: Z = 1.14 (P = 0.26)						
1.2 IVT low						
ATTENTION RCT	104	226	26	114	47.4%	2.02 [1.40 , 2.91]
Subtotal (95% CI)		**226**		**114**	**47.4%**	**2.02 [1.40 , 2.91]**
Total events:	104		26			
Heterogeneity: Not applicable						
Test for overall effect: Z = 3.76 (P = 0.0002)						
Total (95% CI)		**380**		**260**	**100.0%**	**1.52 [0.89 , 2.58]**
Total events:	172		81			
Heterogeneity: Tau² = 0.12; Chi² = 5.42, df = 1 (P = 0.02); I² = 82%						
Test for overall effect: Z = 1.53 (P = 0.12)						
Test for subgroup differences: Chi² = 5.42, df = 1 (P = 0.02), I² = 81.6%						



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Evidence mRS 0-2

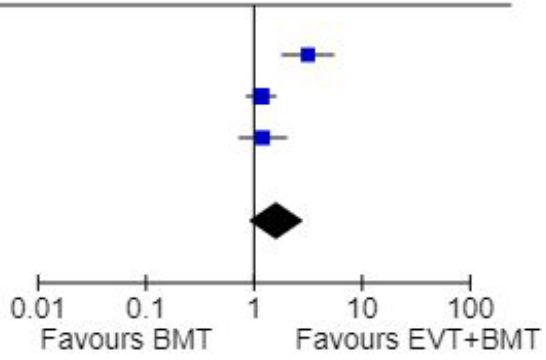
PICO 2

Study or Subgroup	Endovascular thrombectomy plus best medical management Events	Total	Best medical management Events	Total	Weight	Risk ratio IV, Random, 95% CI
ATTENTION RCT	75	226	12	114	30.5%	3.15 [1.79 , 5.55]
BASICS RCT	54	154	44	146	37.6%	1.16 [0.84 , 1.61]
BEST RCT	22	66	18	65	31.9%	1.20 [0.72 , 2.03]
Total (95% CI)		**446**		**325**	**100.0%**	**1.59 [0.89 , 2.86]**
Total events:	151		74			

Heterogeneity: Tau² = 0.21; Chi² = 9.43, df = 2 (P = 0.009); I² = 79%

Test for overall effect: Z = 1.56 (P = 0.12)

Test for subgroup differences: Not applicable



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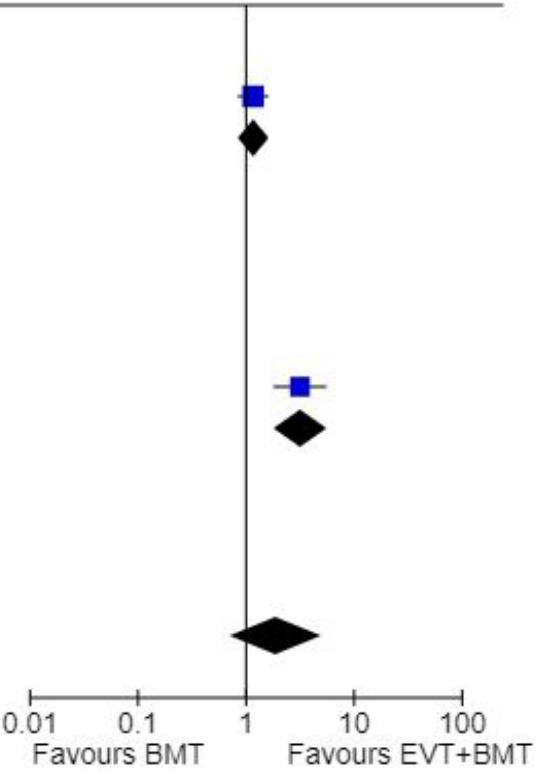
Evidence mRS 0-2

PICO 2

Study or Subgroup	Endovascular thrombectomy plus best medical management Events	Total	Best medical management Events	Total	Weight	Risk ratio IV, Random, 95% CI
1.2.1 IVT high						
BASICS RCT	54	154	44	146	52.8%	1.16 [0.84 , 1.61]
Subtotal (95% CI)		**154**		**146**	**52.8%**	**1.16 [0.84 , 1.61]**
Total events:	54		44			
Heterogeneity: Not applicable						
Test for overall effect: Z = 0.91 (P = 0.36)						
1.2.2 IVT low						
ATTENTION RCT	75	226	12	114	47.2%	3.15 [1.79 , 5.55]
Subtotal (95% CI)		**226**		**114**	**47.2%**	**3.15 [1.79 , 5.55]**
Total events:	75		12			
Heterogeneity: Not applicable						
Test for overall effect: Z = 3.97 (P < 0.0001)						
Total (95% CI)		**380**		**260**	**100.0%**	**1.86 [0.70 , 4.94]**
Total events:	129		56			
Heterogeneity: Tau² = 0.44; Chi² = 8.92, df = 1 (P = 0.003); I² = 89%						
Test for overall effect: Z = 1.25 (P = 0.21)						
Test for subgroup differences: Chi² = 8.92, df = 1 (P = 0.003), I² = 88.8%						



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EVT in 6-24 hour time window

PICO 3W

PICO 3: For adults with BAO-related acute ischemic stroke 6-24 hours from last known well, does EVT plus BMT compared with BMT alone improve outcomes?

Evidence-based Recommendation

For adults with BAO-related acute ischaemic stroke presenting within 6–24 hours from the time last known well, **we suggest EVT plus BMT over BMT alone**.*
The recommendation considers only patients with NIHSS ≥ 10 (please see also PICO 4).

Quality of evidence: **Very low** ⊕
Strength of recommendation: **Weak for intervention** ↑?

* Much of this evidence comes from Asian trials with high prevalence of ICAD, and in which BMT often comprises conventional therapy only (antiaggregatory and anticoagulation). For imaging criteria, please refer to PICO 5.

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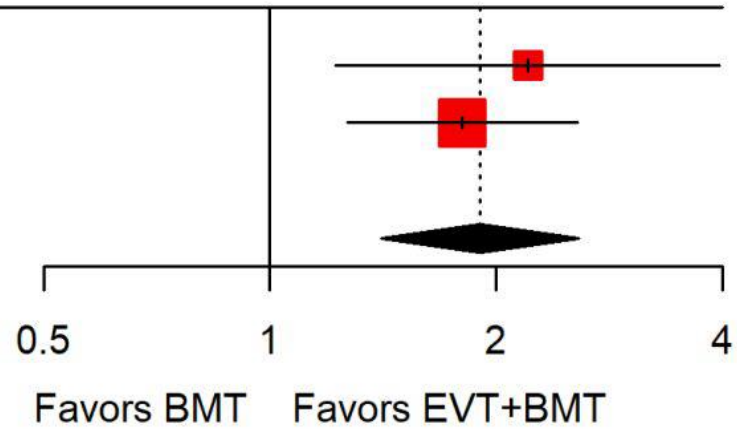
Evidence mRS 0-3

Study	logRR	SE	Weight	Risk Ratio IV, Random, 95% CI
ATTENTION	0.79	0.30	26.5%	2.20 [1.22, 3.97]
BAOCHE	0.59	0.18	73.5%	1.80 [1.27, 2.57]
Total (95% CI)			**100.0%**	**1.90 [1.41, 2.57]**

Heterogeneity: $Tau^2 = 0$; $Chi^2 = 0.33$, df = 1 (P = .57); $I^2 = 0\%$

Test for overall effect: Z = 4.17 (P < .01)



Risk of bias domains

Study	D1	D2	D3	D4	D5	Overall
ATTENTION	-	X	+	+	+	X
BAOCHE	+	X	-	+	+	X

Domains:
D1: Bias arising from the randomization process.
D2: Bias due to deviations from intended intervention.
D3: Bias due to missing outcome data.
D4: Bias in measurement of the outcome.
D5: Bias in selection of the reported result.

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Selection for EVT

PICO 4W

PICO 4: For adults with BAO-related acute ischemic stroke, does selection of reperfusion treatment (IVT or EVT) based on specific presentation (e.g., high NIHSS cutoff, coma on admission, proximal location of basilar artery occlusion) compared with other presentation features (e.g., low NIHSS cutoff, no coma on admission, distal location of basilar artery occlusion) modify the outcome?

Key subgroups

NIHSS < 10 and > 10

Location: Proximal – Mid - Distal

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Selection for EVT

PICO 4

PICO 4: For adults with BAO-related acute ischemic stroke, does selection of reperfusion treatment (IVT or EVT) based on specific presentation (e.g., high NIHSS cutoff, coma on admission, proximal location of basilar artery occlusion) compared with other presentation features (e.g., low NIHSS cutoff, no coma on admission, distal location of basilar artery occlusion) modify the outcome?

For adults with BAO-related acute ischaemic stroke, there is a differential treatment effect (a significant interaction) of reperfusion therapy according to specific presentation.
The treatment effect is different for patients with high compared to low NIHSS scores and for proximal or middle locations of basilar artery occlusions compared to distal locations.

For patients presenting with **severe symptoms (NIHSS ≥ 10), we suggest BMT + EVT over BMT only***.

**The effect is stronger for proximal and middle location of the occlusion.*

Quality of evidence: **Very low** ⊕
Strength of recommendation: **Weak for intervention ↑?**

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Selection for EVT

PICO 4

PICO 4: For adults with BAO-related acute ischemic stroke, does selection of reperfusion treatment (IVT or EVT) based on specific presentation (e.g., high NIHSS cutoff, coma on admission, proximal location of basilar artery occlusion) compared with other presentation features (e.g., low NIHSS cutoff, no coma on admission, distal location of basilar artery occlusion) modify the outcome?

For patients presenting with mild-to-moderate symptoms (NIHSS <10), we could not find evidence to recommend EVT over BMT for efficacy, but BMT appeared safer than EVT.
We suggest BMT only over EVT+BMT in this group*.

*These data come from a randomised trial with low prevalence of ICAD, and in which BMT very often comprised intravenous thrombolysis. These findings are also supported by non-randomised data.

Quality of evidence: **Very low ⊕**
Strength of recommendation: **Weak for intervention ↑?**

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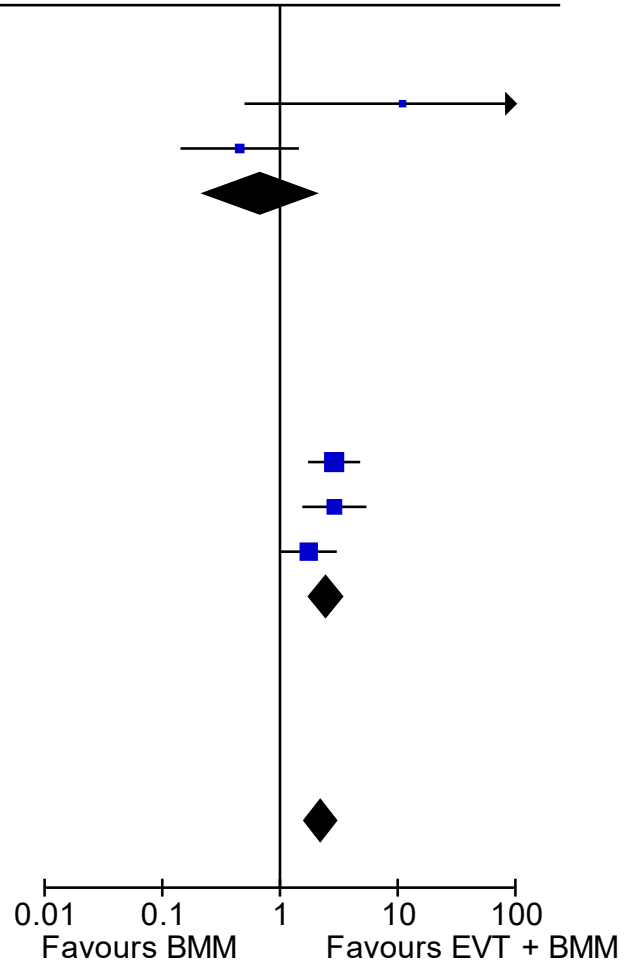
NIHSS 0-9 vs ≥ 10

Study or Subgroup	EVT+BMM Events	EVT+BMM Total	BMM Events	BMM Total	Weight	Odds ratio IV, Fixed, 95% CI
1.4.1 NIHSS 0-9						
BAOCHE 6-9	6	6	6	11	1.0%	11.00 [0.50 , 242.34]
BASICS 0-9	20	31	24	30	7.1%	0.45 [0.14 , 1.45]
Subtotal (95% CI)		**37**		**41**	**8.0%**	**0.67 [0.23 , 1.99]**
Total events:	26		30			
Heterogeneity: Chi² = 3.58, df = 1 (P = 0.06); I² = 72%						
Test for overall effect: Z = 0.72 (P = 0.47)						
1.4.2 NIHSS ≥ 10						
ATTENTION ≥ 10	104	226	26	114	36.4%	2.89 [1.73 , 4.80]
BAOCHE ≥ 10	45	104	20	96	24.1%	2.90 [1.55 , 5.43]
BASICS ≥ 10	48	123	31	116	31.5%	1.75 [1.01 , 3.04]
Subtotal (95% CI)		**453**		**326**	**92.0%**	**2.44 [1.77 , 3.36]**
Total events:	197		77			
Heterogeneity: Chi² = 2.09, df = 2 (P = 0.35); I² = 5%						
Test for overall effect: Z = 5.44 (P < 0.00001)						
Total (95% CI)		**490**		**367**	**100.0%**	**2.20 [1.62 , 2.99]**
Total events:	223		107			
Heterogeneity: Chi² = 10.64, df = 4 (P = 0.03); I² = 62%						
Test for overall effect: Z = 5.02 (P < 0.00001)						
Test for subgroup differences: Chi² = 4.97, df = 1 (P = 0.03), I² = 79.9%						



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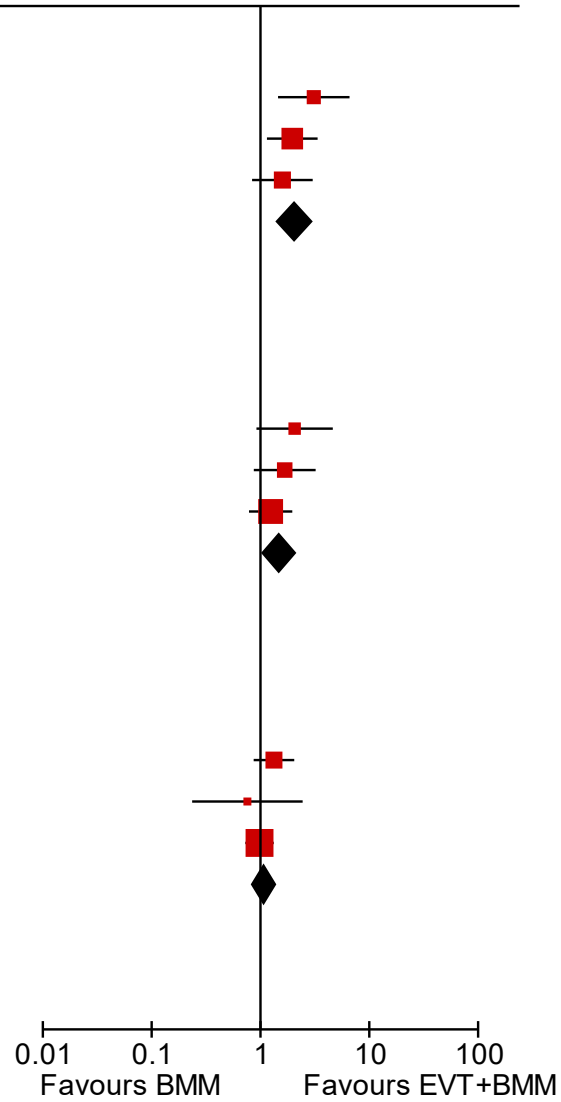
Location of BAO

Study or Subgroup	log[RR]	SE	Weight	Risk ratio IV, Random, 95% CI
1.1.1 proximal				
ATTENTION proximal	1.128171	0.385842	22.8%	3.09 [1.45 , 6.58]
BAOCHE proximal	0.672944	0.27352	45.4%	1.96 [1.15 , 3.35]
BASICS proximal	0.463734	0.327281	31.7%	1.59 [0.84 , 3.02]
Subtotal (95% CI)			**100.0%**	**2.03 [1.42 , 2.92]**
Heterogeneity: Tau² = 0.00; Chi² = 1.76, df = 2 (P = 0.41); I² = 0%				
Test for overall effect: Z = 3.85 (P = 0.0001)				
1.1.2 middle				
ATTENTION middle	0.722706	0.412237	17.7%	2.06 [0.92 , 4.62]
BAOCHE middle	0.512824	0.333844	27.1%	1.67 [0.87 , 3.21]
BASICS middle	0.215111	0.233752	55.2%	1.24 [0.78 , 1.96]
Subtotal (95% CI)			**100.0%**	**1.47 [1.05 , 2.07]**
Heterogeneity: Tau² = 0.00; Chi² = 1.35, df = 2 (P = 0.51); I² = 0%				
Test for overall effect: Z = 2.22 (P = 0.03)				
1.1.3 distal				
ATTENTION distal	0.285179	0.219101	31.4%	1.33 [0.87 , 2.04]
BAOCHE distal	-0.276753	0.596481	4.2%	0.76 [0.24 , 2.44]
BASICS distal	-0.020203	0.153036	64.4%	0.98 [0.73 , 1.32]
Subtotal (95% CI)			**100.0%**	**1.07 [0.84 , 1.36]**
Heterogeneity: Tau² = 0.00; Chi² = 1.65, df = 2 (P = 0.44); I² = 0%				
Test for overall effect: Z = 0.53 (P = 0.60)				
Test for subgroup differences: Chi² = 8.87, df = 2 (P = 0.01), I² = 77.4%				



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Imaging criteria, early ischemic changes

PICO 5: For adults with BAO-related acute ischaemic stroke, does selection of reperfusion therapy (IVT and/or EVT) candidates based on a particular pc-ASPECTS compared with no specific threshold improve identification of patients with a therapy effect on outcomes?

Evidence-based Recommendation

For adults with BAO-related acute ischaemic stroke without extensive ischaemic changes at baseline (pc-ASPECTS 7-10), we suggest reperfusion therapy over no reperfusion therapy according to the certainty of evidence and strength of recommendation in PICOs 1, 2, 3, 4, and 7.

For adults with BAO-related acute ischaemic stroke with pc-ASPECTS 0-6, there are insufficient data to make an evidence-based recommendation on the use of reperfusion therapy. (See the Expert Consensus Statement below).

Quality of evidence: -
Strength of recommendation: -

Expert Consensus Statement

Imaging criteria, early ischemic changes

For adults with BAO-related acute ischaemic stroke with ischaemic changes at baseline being more extensive than those included in randomised controlled clinical trials (i.e., pc-ASPECTS 0-6), 10/10 MWG members suggest considering other prognostic variables (such as pre-stroke handicap, age, frailty) before offering reperfusion therapy.

However, for patients with very extensive bilateral and/or brainstem ischemic lesions, 7/10 MWG members suggest no reperfusion therapy.

Advanced imaging, collaterals

PICO 6: For adults with BAO-related acute ischaemic stroke, does selection of reperfusion therapy (EVT or IVT) candidates based on advanced imaging criteria (perfusion, core, or collateral imaging) compared with no advanced imaging improve identification of patients with a therapy effect on outcomes?

Evidence-based Recommendation

For adults with BAO-related acute ischaemic stroke, there are insufficient data to make an evidence-based recommendation on the selection of reperfusion therapy based on evaluation of advanced imaging (perfusion, core, or collateral imaging). Please see the Expert Consensus Statement below.

Quality of evidence: -

Strength of recommendation: -

Expert Consensus Statement

PICO 6

Advanced imaging, collaterals

For adults with BAO-related acute ischaemic stroke (and in the absence of extensive ischaemic changes in the posterior circulation*), 10/10 MWG members suggest reperfusion therapy (EVT or IVT) rather than no reperfusion therapy, irrespective of any collateral score points.

*extensive bilateral and/or brainstem ischemic changes

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IVT + EVT vs. direct EVT

PICO 7: For adults with BAO-related acute ischaemic stroke without contraindication for IVT, does direct EVT compared to EVT plus IVT improve outcomes?

Evidence-based Recommendation

For adults with BAO-related acute ischaemic stroke, we suggest combined IVT and EVT treatment over direct EVT in case IVT is not contraindicated.

Quality of evidence: **Low** ⨁⨁

Strength of recommendation: **Weak for intervention** ↑?

Technique: Aspiration vs stent retriever

PICO 8W

PICO 8: For adults with BAO-related acute ischaemic stroke, does mechanical thrombectomy using direct aspiration as the first-line strategy compared with a stent retriever as the first-line strategy improve outcomes?

Evidence-based Recommendation

For adults with BAO-related acute ischaemic stroke, **we suggest EVT using direct aspiration** over stent retriever as the first-line strategy.

Quality of evidence: **Very low ⊕**

Strength of recommendation: **Weak for intervention ↑?**

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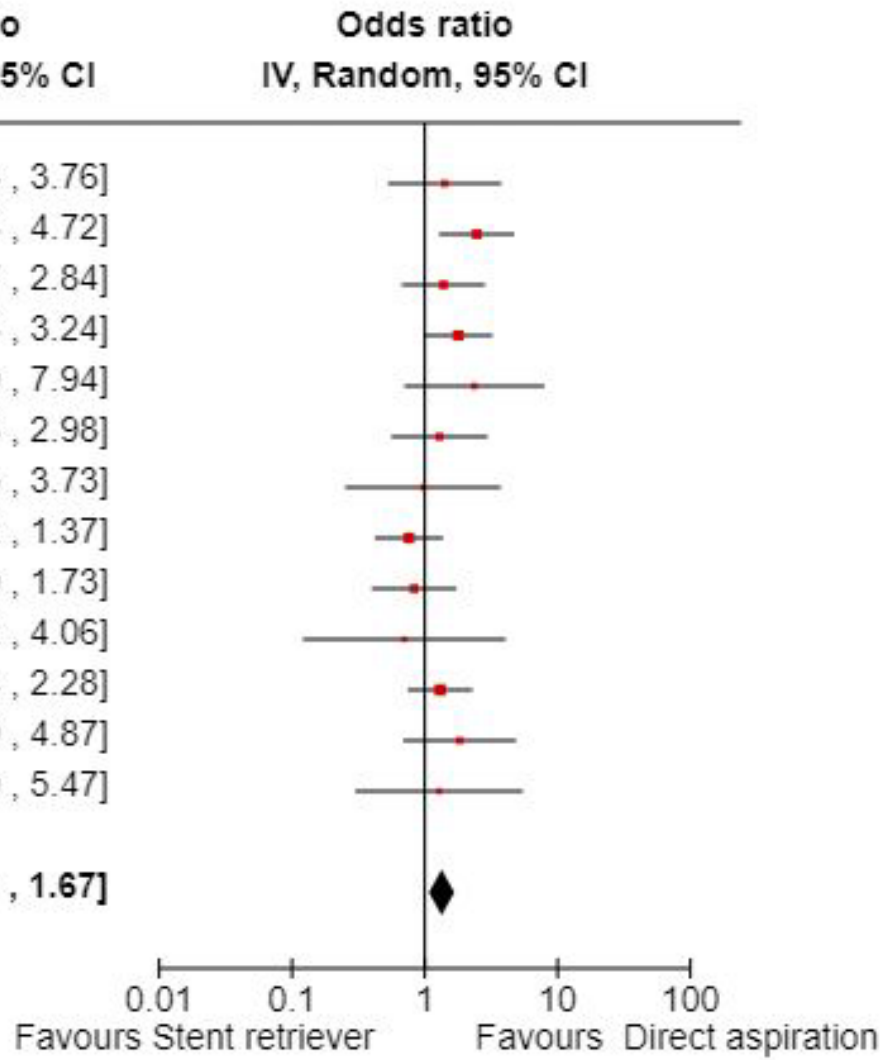
Aspiration vs Stentretriever ***mRS 0-2***

Study or Subgroup	log[OR]	SE	Weight	Odds ratio IV, Random, 95% CI
Abdelrady et al.	0.34359	0.500507	5.1%	1.41 [0.53 , 3.76]
Alawieh et al.	0.900161	0.332901	11.5%	2.46 [1.28 , 4.72]
Baik et al.	0.322083	0.368446	9.4%	1.38 [0.67 , 2.84]
Bernsen et al.	0.576613	0.305837	13.6%	1.78 [0.98 , 3.24]
Choi et al.	0.858662	0.619228	3.3%	2.36 [0.70 , 7.94]
Gory et al.	0.254642	0.426473	7.0%	1.29 [0.56 , 2.98]
Kaneko et al.	-0.030459	0.687418	2.7%	0.97 [0.25 , 3.73]
Kang et al.	-0.274437	0.301616	14.0%	0.76 [0.42 , 1.37]
Knapen et al.*	-0.18633	0.375052	9.0%	0.83 [0.40 , 1.73]
Lee et al.	-0.356675	0.896453	1.6%	0.70 [0.12 , 4.06]
Mierzwa et al	0.265503	0.286087	15.5%	1.30 [0.74 , 2.28]
Sangpetngam et al.	0.604316	0.499042	5.1%	1.83 [0.69 , 4.87]
Son et al.	0.24686	0.741105	2.3%	1.28 [0.30 , 5.47]
Total (95% CI)			**100.0%**	**1.34 [1.07 , 1.67]**

Heterogeneity: Tau² = 0.00; Chi² = 11.37, df = 12 (P = 0.50); I² = 0%

Test for overall effect: Z = 2.59 (P = 0.010)

Test for subgroup differences: Not applicable



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Aspiration vs Stentretriever ***mTICI 2B-3***

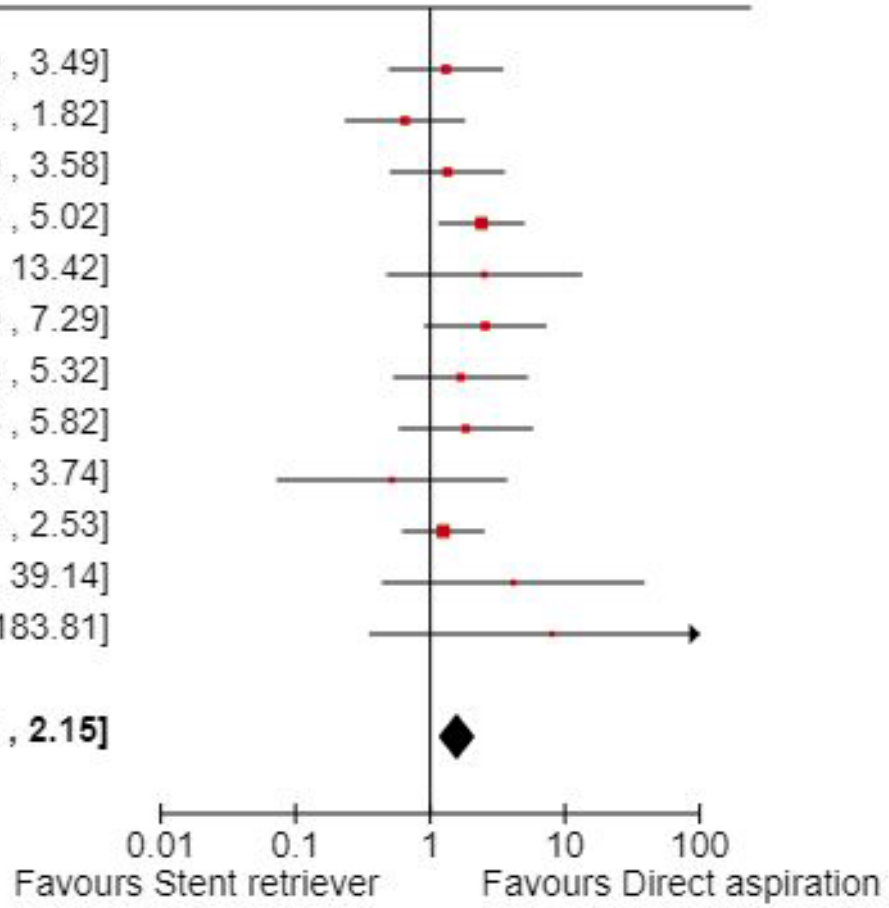
PICO 8

Study or Subgroup	log[OR]	SE	Weight	Odds ratio IV, Random, 95% CI
Abdelrady et al.	0.270027	0.500107	10.2%	1.31 [0.49 , 3.49]
Alawieh et al.	-0.430783	0.524873	9.3%	0.65 [0.23 , 1.82]
Baik et al.	0.29267	0.501467	10.2%	1.34 [0.50 , 3.58]
Bernsen et al.	0.875469	0.376957	18.0%	2.40 [1.15 , 5.02]
Choi et al.	0.924259	0.853342	3.5%	2.52 [0.47 , 13.42]
Gory et al.	0.940007	0.533649	9.0%	2.56 [0.90 , 7.29]
Kang et al.	0.518794	0.588366	7.4%	1.68 [0.53 , 5.32]
Knapen et al.*	0.609766	0.587405	7.4%	1.84 [0.58 , 5.82]
Lee et al.	-0.653926	1.006583	2.5%	0.52 [0.07 , 3.74]
Mierzwa et al	0.222327	0.360613	19.6%	1.25 [0.62 , 2.53]
Sangpetngam et al.	1.419084	1.146992	1.9%	4.13 [0.44 , 39.14]
Son et al.	2.084429	1.596708	1.0%	8.04 [0.35 , 183.81]
Total (95% CI)			**100.0%**	**1.57 [1.15 , 2.15]**

Heterogeneity: Tau² = 0.00; Chi² = 8.92, df = 11 (P = 0.63); I² = 0%

Test for overall effect: Z = 2.82 (P = 0.005)

Test for subgroup differences: Not applicable



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PTA / stent in atherosclerosis and stenosis

PICO 9W

PICO 9: For adults with BAO-related acute ischaemic stroke and with suspected intracranial atherosclerotic disease and BA stenosis, does PTA and/or stenting of the basilar artery plus EVT compared with EVT alone improve outcomes?

Evidence-based Recommendation

For adults with BAO-related acute ischaemic stroke and with a suspected ICAD and BA stenosis, there is insufficient evidence to make an evidence-based recommendation on the use of PTA and/or stenting in addition to EVT.

Quality of evidence: -

Strength of recommendation: -

Please see the Expert Consensus Statement.

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Expert Consensus Statement

PTA / stent in atherosclerosis and stenosis

For adults with BAO-related acute ischaemic stroke and with suspected ICAD and severe underlying BA stenosis, **10/10** MWG members **suggest *rescue PTA and/or stenting*** after failed endovascular procedure.

Add-on antithrombotics

PICO 10: For adults with BAO-related acute ischaemic stroke subjected to reperfusion therapy (EVT or IVT), does add-on antithrombotic treatment during EVT or within 24 hours after IVT or EVT compared with no add-on antithrombotic treatment improve outcomes?

Evidence-based Recommendation

For adults with BAO-related acute ischaemic stroke treated with EVT and no concomitant IVT, and where EVT procedure is complicated (defined as failed, or imminent re-occlusion, or need for additional stenting or angioplasty), we suggest add-on antithrombotic* treatment during EVT procedure or within 24 hours after EVT over no add-on antithrombotic treatment.

*However, this should be used as a rescue strategy after assessing the bleeding risk of patients in case of complicated EVT, in line with the ESO guidelines on the management of ICAD[95].

Quality of evidence: **Very low** ⊕
Strength of recommendation: **Weak for intervention** ↑?

Areas of future research

Patient selection

- Clinical characteristics (NIHSS, GCS)
- Imaging (CTP, CTA, MRI)
- PCA, SCA, AICA, PICA

Treatment technique

- Devices (Aspiration catheters, Stentretrievers, etc)
- Anesthetic management

Neuroprotection

Cost effectiveness

Prognostication

- Validation and added benefit of prediction tools
- Implementation and efficacy of prediction tools
- AI

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Conclusion

- IVT for BAO is suggested by MWG up to 24 hours
- EVT for BAO is suggested up to 24h for NIHSS ≥ 10
- Reperfusion treatment (IVT, EVT) is suggested by MWG in absence of extensive bilateral and/or brainstem ischemic lesions
- Aspiration is suggested above stent retriever for EVT in BAO
- Rescue PTA/stenting is suggested by MWG in failed reperfusion after EVT
- Add-on antithrombotic treatment is suggested in complicated* EVT and no concomitant IVT

  * complicated = failed or imminent re-occlusion or need for additional stenting/angioplasty

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