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MASTERSTROKE trial shows no difference in outcomes between systolic blood pressure targets during endovascular thrombectomy

(Wednesday, 6 May, Maastricht, the Netherlands) At the European Stroke Organisation Conference (ESOC) 2026, researchers today presented results from the MASTERSTROKE trial, a multicentre double-blind randomised controlled trial (RCT) which sought to test whether specific systolic blood pressure targets (140 mmHg vs 170 mmHg) during endovascular thrombectomy (EVT) for anterior circulation stroke were associated with differences in the modified Rankin Scale (mRS) at 90 days.[1]

The results showed that there was no difference between treatment groups in mRS at 90 days, nor were there differences in symptomatic intracranial haemorrhage, good functional outcome or 90-day mortality between groups.

Cerebral autoregulation is impaired in patients with ischaemic stroke. Current guidelines recommend maintaining systolic blood pressure (SBP) between 140 and 180 mmHg during EVT. MASTERSTROKE sought to investigate whether achieving different target SBPs (140 mmHg versus 170 mmHg) would lead to a difference in modified Rankin Scale (mRS) at 90 days.

A total of 562 patients with LVO of the anterior circulation planned for EVT under general anaesthesia were randomised 1:1 to achieve an intra-procedural SBP of 140 ± 10 mmHg or 170 ± 10 mmHg. The primary outcome was shift in the modified Rankin Scale score (mRS) at 90 days. The median NIHSS of included patients was 15. At 90 days, the median mRS was 2 (IQR 1–4) in both groups (p=0.49). In addition, there were no differences observed in symptomatic intracranial haemorrhage, good functional outcome or 90-day mortality between the blood pressure groups.

MASTERSTROKE is the first RCT to demonstrate that there is no additional benefit or harm associated with SBP across the range of 140–180 mmHg during EVT for LVO anterior circulation stroke and provides class I evidence to support current practice guidelines.

END

References:

1. Campbell, D., et al. (2026). Management of systolic blood pressure during endovascular thrombectomy under general anaesthesia for acute ischaemic stroke (MASTERSTROKE): a multi-centre, double-blind parallel group, randomised controlled trial. Oral presentation. *European Stroke Organisation Conference (ESOC) 2026.*

Intra-arterial tenecteplase is safe but does not improve reperfusion after incomplete thrombectomy in the TECNO trial

(Wednesday, 6 May, Maastricht, the Netherlands) At the European Stroke Organisation Conference (ESOC) 2026, researchers today presented results from the TECNO trial, showing that intra-arterial tenecteplase did not significantly improve early or late reperfusion rates compared to best medical treatment in stroke patients with incomplete reperfusion following mechanical thrombectomy.[1]

The treatment was found to be safe regarding intracranial bleeding and the results highlight the need for further refinement of patient selection and treatment protocols in this setting.

Incomplete reperfusion remains a common and clinically important challenge following mechanical thrombectomy. Direct intra-arterial administration of tenecteplase offers the advantage of targeted drug delivery to the residual clot.

TECNO (Safety and efficacy of intra-arterial tenecteplase for non-complete reperfusion of intracranial occlusions) was a multicentre, randomised, open-label, blinded-endpoint trial designed to test whether a 3 mg dose of intra-arterial tenecteplase in addition to best medical treatment improves reperfusion in patients with incomplete reperfusion after mechanical thrombectomy. The primary efficacy outcomes are early and late reperfusion, as defined by reperfusion improvement on angiography images 25 minutes after randomisation, or complete reperfusion on 24 h ± 6 h MR/CT perfusion imaging, respectively. The trial was coordinated by the University Hospital Bern Inselspital and conducted across multiple high-volume stroke centres in Europe.

In the primary analysis, improved early reperfusion was observed in 39% of patients randomised to tenecteplase compared with 36% in the control group, corresponding to an adjusted risk difference of 3.4% (95% CI −15% to 21.7%), which was not statistically significant. Late reperfusion at 24 hours was observed in 51% versus 40% of patients respectively (adjusted risk difference 15.4%, 95% CI −3.3% to 32.9%), also non-significant. Regarding safety, symptomatic intracranial haemorrhage occurred in 5.2% of patients in the tenecteplase group compared with 8.6% in the control group, confirming an acceptable safety profile with respect to intracranial bleeding.

At 90 days, functional independence (mRS 0–2) was achieved by 27% of patients in the tenecteplase group compared with 38% in the control group (acOR 0.60, 95% CI 0.34–1.06).

The investigators emphasised that the trial was designed and powered to evaluate reperfusion as its primary endpoint and that definitive conclusions regarding clinical outcomes should not be drawn from these data alone.

Professor Johannes Kaesmacher, the Principal Investigator of TECNO, commented on these results: "Taken alone, these findings do not support the routine administration of intra-arterial tenecteplase as a pharmacological adjunct in cases of incomplete reperfusion."

In conclusion, the TECNO trial does not demonstrate a significant benefit of intra-arterial tenecteplase on reperfusion or clinical outcomes following incomplete thrombectomy but confirms its safety regarding intracranial bleeding. These results highlight the need for further trials with more refined patient selection and optimised treatment protocols to address the ongoing challenge of incomplete reperfusion in acute stroke care.

END

References:

1. Kaesmacher, J., et al. (2026). Safety and efficacy of intra-arterial tenecteplase for non-complete reperfusion of intracranial occlusions (TECNO). Oral presentation. *European Stroke Organisation Conference (ESOC) 2026.*

Finding the right dose of early movement after stroke: insights from the AVERT-DOSE trial

(Wednesday, 6 May, Maastricht, the Netherlands) At the European Stroke Organisation Conference (ESOC) 2026, researchers today presented findings from the AVERT-DOSE trial, which explores how different "doses" of early mobility training affect recovery in patients with mild and moderate ischaemic stroke.[1]

Regaining movement is a vital early goal for patients after stroke, but how early and how much training is beneficial remain unresolved questions, particularly following the influential AVERT trial, which raised concerns about very early, intensive mobilisation.

The AVERT-DOSE trial was designed to address this uncertainty. Led by Professor Julie Bernhardt of The Florey Institute, Melbourne, the study explores how different "doses" of early mobility training affect recovery in patients with mild and moderate ischaemic stroke.

"Early rehabilitation is widely used across stroke units worldwide, but we still lack clear evidence on the optimal timing and intensity," said Professor Julie Bernhardt. "With AVERT-DOSE, we aimed to identify regimens that are both safe and effective."

The trial included 1,000 patients across 50 hospitals in seven countries, making it one of the largest and most internationally diverse studies of its kind. Participants were grouped based on stroke severity and randomly assigned to one of four different mobility training regimens, all initiated within 48 hours of stroke onset. The interventions focused on functional, task-specific, upright movement, delivered by trained physiotherapists and nurses.

Although the trial was stopped earlier than planned due to funding constraints, the study still provides a robust dataset. The primary outcome, functional recovery at three months, will be presented separately for patients with mild and moderate stroke, offering insights into different groups' response to early mobilisation.

The findings are expected to help resolve uncertainty around early rehabilitation practices, as highlighted by the European Stroke Organisation guideline for motor rehabilitation last year. By identifying the most effective and safest mobility regimens, AVERT-DOSE could contribute to more tailored and evidence-based stroke care.

END

References:

1. Bernhardt, J., et al. (2026). AVERT DOSE: a phase III, multi-arm, adaptive randomised trial to determine optimal early (<48 hr start) mobility training in patients with mild & moderate ischaemic stroke. Oral presentation. *European Stroke Organisation Conference (ESOC) 2026.*

New analyses from OCEANIC-STROKE trial show asundexian significantly reduces severity and incidence of recurrent ischaemic stroke

(Wednesday, 6 May, Maastricht, the Netherlands) At the European Stroke Organisation Conference (ESOC) 2026, researchers today presented late-breaking results from the OCEANIC-STROKE trial, demonstrating that the investigational Factor XIa (FXIa) inhibitor asundexian not only reduces the risk of recurrent ischaemic stroke but also lessens the clinical severity of those strokes when they do occur.[1]

Secondary prevention for non-cardioembolic ischaemic stroke has traditionally relied on antiplatelet therapy such as aspirin or clopidogrel. While effective, the residual risk of recurrence remains high and increasing the intensity of antithrombotic therapy carries a prohibitive risk of major bleeding. Factor XIa (FXIa) has emerged as a promising "holy grail", playing a key role in pathological blood clot formation but less involved in haemostasis, the body's ability to stop bleeding after injury.[2]

Primary results from OCEANIC-STROKE, an international phase III trial conducted at 702 sites across 37 countries and regions, which randomised 12,327 patients with non-cardioembolic stroke or high-risk transient ischaemic attack (TIA), were presented during the 2026 ISC.[3]

In OCEANIC-STROKE, patients were randomised to placebo or 50 mg asundexian daily, both in combination with standard antiplatelet therapy. Patients treated with asundexian experienced an absolute risk reduction for ischaemic stroke of 1.9% by one year, without an added risk of major bleeding.

The new analyses from OCEANIC-STROKE, presented today by Dr Mike Sharma, Principal Investigator of the study and senior scientist at the Population Health Research Institute, a joint institute of McMaster University and Hamilton Health Sciences, explored the trial results in greater detail.

Key findings from OCEANIC-STROKE:

- Reduced frequency of ischaemic stroke: ischaemic strokes occurred in 6.2% of the asundexian group compared to 8.4% in the placebo group (cause-specific hazard ratio [csHR] 0.74, 95% CI 0.65–0.84; p<0.001)
- Lower severity: among patients who experienced a recurrent stroke, those on asundexian were less likely to have a severe stroke (defined as National Institutes of Health Stroke Scale [NIHSS] ≥8) compared to placebo (22.9% vs 30.3%)

- Reduced disabling strokes: asundexian reduced the occurrence of disabling strokes (modified Rankin Scale [mRS] ≥3 or an increase of ≥1 from baseline) by 31%
- Safety profile: the occurrence of haemorrhagic transformation, a serious bleeding complication, was identical between the two groups (0.3%), suggesting a favourable safety profile for Factor XIa inhibition
- Lower need for intervention: patients on asundexian were less likely to require endovascular thrombectomy (EVT), suggesting a potential reduction in large artery occlusions

"The data suggests that by targeting Factor XIa, we are not just preventing more strokes; we are ensuring that, if a stroke occurs, it is less debilitating for the patient," said Dr Sharma. "The fact that we achieved this without increasing the risk of haemorrhagic transformation is a significant step forward in secondary prevention."

Asundexian is manufactured by Bayer Pharmaceuticals.

END

References:

1. Sharma, M., et al. (2026). Incident ischaemic stroke in the randomised, placebo-controlled, event-driven OCEANIC-STROKE trial of asundexian for secondary stroke prevention: severity, treatment and outcomes. Oral presentation. *European Stroke Organisation Conference (ESOC) 2026.*
2. Fredenburgh, J.C., Weitz, J.I. (2021). Factor XI as a target for new anticoagulants. *Haemostaseologie*, 41, 104–110.
3. Sharma, M., Dong, Q., Hirano, T., Kasner, S.E., et al. (2026). Asundexian for secondary stroke prevention. *N Engl J Med*, 394, 1467–1479.

Cooling the brain during stroke treatment improves recovery: findings from CHILL-ART trial

(Wednesday, 6 May, Maastricht, the Netherlands) At the European Stroke Organisation Conference (ESOC) 2026, researchers today presented findings from the CHILL-ART trial, demonstrating that delivering targeted brain cooling during endovascular thrombectomy significantly improves recovery outcomes for patients with acute ischaemic stroke due to large-vessel occlusion.[1]

The CHILL-ART trial, a multicentre, randomised controlled study, found that adjunctive intra-arterial selective hypothermia, administered during thrombectomy, led to a meaningful increase in functional independence at 90 days compared with standard thrombectomy alone.

The CHILL-ART trial enrolled 262 patients across 26 comprehensive stroke centres in China. Participants aged 18 to 85 years and treated within 24 hours of stroke onset were randomly assigned to receive either thrombectomy plus intra-arterial infusion of cold saline (hypothermia group) or thrombectomy with room-temperature saline (control group).

The study's primary outcome, functional independence defined as a modified Rankin Scale score of 0–2 at 90 days, was achieved in 54.7% of patients in the hypothermia group compared with 39.8% in the control group (adjusted risk ratio 1.36, 95% CI 1.05–1.76; p=0.018).

Importantly, safety outcomes were comparable between groups, with no significant increase in symptomatic intracranial haemorrhage (7.0% vs 9.0%) or 90-day mortality (13.3% vs 18.0%).

"Even when we successfully remove the clot, many patients do not regain independence because of ongoing brain injury after blood flow is restored," said Dr Zhi-Xin Huang, Principal Investigator of the study. "Our findings show that targeted cooling delivered directly into the brain at the moment of reperfusion can meaningfully improve recovery without adding risk."

The intervention uses standard thrombectomy equipment and refrigerated saline, making it readily scalable in routine clinical practice without requiring specialised devices or additional training.

The CHILL-ART trial addresses a critical unmet need in stroke care: improving outcomes after technically successful clot removal. By combining reperfusion with targeted neuroprotection, the study introduces a promising new paradigm in acute stroke treatment.

These findings may inform future clinical guidelines and support broader adoption of intra-arterial hypothermia as an accessible, cost-effective strategy to reduce disability after stroke.

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Presentation:

Please find further information in the following presentation (see here).

References:

1. Huang, Z.-X., et al. (2026). Adjunctive intra-arterial hypothermia with endovascular thrombectomy for acute anterior circulation stroke (CHILL-ART): a randomised, controlled, multicentre trial. Oral presentation. *European Stroke Organisation Conference (ESOC) 2026.*

Selective intra-arterial cooling indicates potential safety benefits but no sufficient functional improvement in stroke patients treated with endovascular thrombectomy

(Wednesday, 6 May, Maastricht, the Netherlands) At the European Stroke Organisation Conference (ESOC) 2026, researchers today presented results from the FOCUS trial investigating selective intra-arterial cooling as an adjunct to endovascular thrombectomy for acute ischaemic stroke, showing that while the cooling technique did not improve functional recovery, it significantly reduced the risk of any intracranial haemorrhage (ICH).[1] These findings provide important insights into the potential role of targeted brain cooling in stroke treatment.

The randomised controlled trial, conducted across 12 hospitals in China, enrolled 258 patients with anterior circulation large vessel occlusion stroke who presented within 24 hours of symptom onset. Patients were randomly assigned to receive either selective intra-arterial cooling plus endovascular thrombectomy or standard thrombectomy treatment alone.

The results showed no significant difference in functional outcomes at 90 days between the two groups, with an adjusted common odds ratio of 1.16 (95% CI 0.75–1.79; p=0.51). However, the cooling technique demonstrated notable safety benefits, reducing any ICH incidence at 24 hours compared to standard treatment (adjusted risk difference −0.174, 95% CI −0.288 to −0.059; p=0.003). There was no difference in the occurrence of symptomatic ICH or mortality between groups.

Hypothermia has long been studied as a potential neuroprotective therapy for stroke, based on its ability to reduce brain metabolism and limit secondary injury. Selective intra-arterial cooling offers a targeted approach to brain cooling during endovascular procedures, though its potential safety benefits require further study.

Dr Shen Li from Beijing Shijitan Hospital, Capital Medical University, Beijing, China, one of the lead authors of the study, commented: “These findings validate the feasibility of selective intra-arterial cooling as an adjunctive therapy during endovascular thrombectomy. The marked decrease in any intracranial haemorrhage indicates a potential protective effect on the blood–brain barrier and microvasculature, which may translate into clinical benefits. Although we did not observe a functional improvement in this trial, it paves the way for future studies with larger sample sizes or refined patient selection to fully unlock the neuroprotective potential of hypothermia.”

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Presentation:

Please find further information in the following presentation (see here).

References:

1. Li, S., et al. (2026). Selective intra-arterial cooling infusion with endovascular thrombectomy for acute ischaemic stroke: a multicentre, randomised, controlled trial. Oral presentation. *European Stroke Organisation Conference (ESOC) 2026.*