PRESS RELEASE

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ESOC 2025 Plenary Highlights (Large Clinical Studies): Friday, 23 May 2025

Telemedicine on Mobile Stroke Units proven safe and superior: MSU-TELEMED trial results presented at ESOC 2025

(Friday, 23 May 2025, Helsinki, Finland) Results from the MSU-TELEMED randomised controlled trial, presented today at the European Stroke Organisation Conference (ESOC) 2025, demonstrate that telemedicine-based neurologist assessments on Mobile Stroke Units (MSUs) are not only safe, but also more resource-efficient than traditional onboard neurologist models—without sacrificing timely treatment.[1]

The trial, conducted across ten tertiary hospitals in Melbourne, Australia, is the first prospective, head-to-head comparison of these two models of stroke care delivery. A total of 275 patients with suspected stroke were randomised based on the availability of onboard or telemedicine neurologist coverage.

Using a novel hierarchical composite outcome—prioritising (1) safety, (2) time to treatment decision, and (3) resource utilisation—the study found that telemedicine significantly outperformed the onboard model, with 76% of patient outcomes favouring telemedicine, compared to 21% for onboard care and 4% showing no difference. The stratified win odds were 3.57 (95% CI: 2.4–5.2, $p<0.0001$).

Importantly, safety outcomes were comparable between groups, with no significant difference in adverse events (12% telemedicine vs. 11% onboard). While the median scene-to-treatment decision time was slightly longer in the telemedicine arm (by four minutes), this was offset by significantly lower resource use—highlighting the model's efficiency.

"There's been a long-standing assumption that having a neurologist physically onboard is the gold standard for MSU care," said Dr. Vignan Yogendrakumar, Principal Investigator and Assistant Professor at the University of Ottawa. "But our trial shows that telemedicine not only holds up—it delivers comparable outcomes in key operational domains."

Among the 18% of patients who received thrombolysis or were transported for endovascular therapy, no difference was observed in functional outcomes at 90 days, underscoring telemedicine's effectiveness even in high-stakes scenarios.

The MSU-TELEMED trial sets a precedent for expanding tele-neurology services in prehospital stroke care and may inform future deployment models that are both scalable and cost-effective.

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References:

1. Yogendrakumar, V., et al. *Safety and efficacy of telemedicine neurologist assessments on a mobile stroke unit: A prospective, open-label, blinded end-point, randomized controlled trial (MSU-TELEMED)*. Presentation O190, presented at the European Stroke Organisation Conference; 23 May 2025; Helsinki, Finland.

About the MSU-TELEMED trial:

Led by researchers at the University of Ottawa and the University of Melbourne, the MSU-TELEMED trial was a prospective, randomized, open-label, blinded-endpoint study designed to evaluate the safety, timeliness, and resource use of telemedicine versus onboard neurologist care on a mobile stroke unit. The study was conducted with support from 10 tertiary hospitals and represents a major advancement in prehospital stroke service delivery.

For further information, please refer to the slides here.

Time is brain: How the MAP-STROKE algorithm could optimise prehospital triage and accelerate lifesaving stroke treatment

(Friday, 23 May 2025, Helsinki, Finland) Every minute counts when a blood clot causes a stroke and cuts off blood to the brain. In these critical moments, ambulance teams serve as the first responders, tasked with making critical decisions about which hospital the patient should be taken to—a choice that can mean the difference between a good recovery and lifelong disability.[1]

In recent years, major advances have been made in acute stroke care with the development of thrombolysis (clot-busting drugs) and thrombectomy (mechanical removal of clots). But both treatments are highly time-sensitive and thrombectomy is only available at highly specialised hospitals. Getting the patient to the right hospital fast is crucial. But the decision isn't always straightforward: while thrombectomy is highly effective for patients with large vessel occlusion (LVO) strokes, it offers no benefit to the majority of stroke patients who do not have LVO. These patients—often candidates for thrombolysis instead—may experience worse outcomes if delayed enroute to a specialised centre. Balancing speed, stroke type, and hospital capabilities is a challenge EMS teams face every day.

"We sought to develop a personalised hospital destination algorithm to improve those decisions," explained Dr Santiago Ortega-Gutierrez, who led the study alongside Professor Dr. Nicholas Mohr and Dr. Grant Brown at the University of Iowa. "We then compared our algorithm with the current American Heart Association (AHA) guideline-based routing."

The study, called MAP-STROKE, was an in-silico trial, meaning it used computer modelling in the entire continental U.S. Drawing on extensive data from previous acute stroke studies, including the Virtual International Stroke Trials Archive, RACECAT, and FAST-MAG, the researchers ran simulations of over 115 million stroke scenarios. The trial was funded by the U.S. National Institutes of Health and the National Institute of Neurological Disorders and Stroke.

"We found that our novel algorithm outperformed current guideline-based routing and improved outcomes for all stroke patients," said Dr. Ortega-Gutierrez. The benefits were particularly good for patients with large vessel occlusion strokes living in rural areas, who were predicted to save nearly 3 hours in time to treatment. "Our findings suggest that, if implemented widely, the algorithm could help nearly 10,000 more stroke patients each year achieve good neurological recovery," concluded Dr. Ortega-Gutierrez. "It underscores just how powerful early hospital routing decisions can be."

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References:

1. Ortega-Gutierrez, S., et al. *Clinical outcomes of a personalized EMS destination selection algorithm for prehospital stroke triage in the United States: The MAP-STROKE in silico trial.* Presentation O191, presented at the European Stroke Organisation Conference; 23 May 2025; Helsinki, Finland.

Efficacy of long-term colchicine therapy for secondary prevention after stroke stratified by on-treatment C-reactive protein: Pre-specified analysis of the CONVINCE randomised trial

(Friday, 23 May 2025, Helsinki, Finland) The CONVINCE trial, presented at the European Stroke Organisation Conference (ESOC) in 2024 investigated whether long-term colchicine would reduce recurrent vascular events after ischaemic stroke. Although no statistically significant benefit was observed on the primary intention-to-treat analysis, those treated with colchicine had fewer recurrent events and a lower CRP level than those receiving placebo. This secondary analysis presented at ESOC 2025 demonstrates that the suppression of CRP level <2mg/L on colchicine treatment is associated with a reduced risk of recurrent MACE.[1]

Anti-inflammatory therapy with colchicine reduces vascular recurrence in coronary disease. The CONVINCE trial investigated whether long-term colchicine therapy would reduce recurrent vascular events after ischaemic stroke. Patients with non-severe, non-cardioembolic ischaemic stroke were randomised to receive 0.5mg colchicine daily or placebo. The primary endpoint was the first event in a MACE composite (including first fatal or non-fatal recurrent ischaemic stroke, myocardial infarction, cardiac arrest, or hospitalisation for unstable angina). The primary results presented at ESOC 2024, showed a numerically, but not statistically significant reduction in recurrent MACE in those treated with colchicine compared with usual care.

This pre-specified secondary analysis reports the results of the CONVINCE trial, stratified by usual care, high CRP (≥2mg/L) on colchicine and low CRP (<2mg/L) on colchicine. There were 1,575 participants receiving usual care, 612 had high CRP (≥2mg/L) despite treatment and 699 achieved low CRP (<2mg/L) on colchicine. The analysis was adjusted for age, sex, baseline CRP level and other cardiovascular risk factors. MACE rates were significantly different across the three categories: 11.8% in those on usual care, 9.9% in high CRP (≥2mg/L) on treatment and 6.7% in low CRP (<2mg/L) on treatment. When patients were stratified by on-treatment CRP level, those who achieved a low CRP (<2mg/L) on colchicine treatment had a reduced risk of recurrent MACE (HR 0.62, 95% CI 0.45 to 0.86), compared to those receiving usual care.

This analysis supports the concept that suppression of inflammation reduces the risk of recurrent vascular events after stroke and that achieving a low CRP <2mg/L on colchicine treatment is important to achieve this reduction in risk.

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References:

1. Kelly, P., et al. *Efficacy of long-term colchicine therapy for secondary prevention after stroke stratified by on-treatment C-reactive protein: Pre-specified analysis of the CONVINCE randomised trial*. Presentation O192, presented at the European Stroke Organisation Conference; 23 May 2025; Helsinki, Finland.

For further information, please refer to the slides here.

First ever randomised trial of colchicine in acute intracerebral haemorrhage patients presented at ESOC 2025

(Friday, 23 May 2025, Helsinki, Finland) Researchers today presented the results from the phase 2 CoVasc-ICH trial at the European Stroke Organisation Conference (ESOC) 2025, marking the first randomised, placebo-controlled study to assess the feasibility and safety of colchicine in patients with acute intracerebral haemorrhage (ICH).[1]

ICH survivors face a significantly elevated risk of ischemic vascular events, including stroke and myocardial infarction.[2] Colchicine, a well-established anti-inflammatory drug, has shown promise in preventing major adverse cardiovascular events in high-risk patients without increasing bleeding risk.[3] Until now, its role in ICH patients remained untested.

The CoVasc-ICH phase 2 study enrolled 100 adults within 48 hours of spontaneous ICH onset, all with either atherosclerotic risk factors or established atherosclerosis. Participants were randomly assigned to receive either oral colchicine 0.5mg once daily or a matching placebo. Conducted at 11 Canadian stroke centres between August 2022 and March 2024, the trial assessed the feasibility of a future definitive trial while collecting important clinical outcomes.

The average recruitment rate, which was the trial's primary endpoint, was 8.9 participants per centre per year. In an exploratory analysis for efficacy major adverse cardiovascular events were similar between treatment arms (11.5% in the colchicine arm vs. 10.4% of patients receiving placebo; Hazard Ratio = 1.22, 95% CI: 0.37–4.01) over a median follow-up of 337 days. Functional outcomes at 6 months were also similar between treatment subgroups. Ischemic stroke did not occur in either treatment subgroup, while two recurrent ICH events were observed in the placebo group. Serious adverse events were numerically more frequent in the colchicine group (15.4%) than placebo (6.3%), though not statistically significant (p=0.145).

"These preliminary findings support the feasibility of a phase III trial and provide initial safety signals regarding colchicine use in acute ICH patients," said the study's lead investigator, Dr Aristeidis Katsanos. "Given the high vascular risk in this population, anti-inflammatory strategies such as colchicine merit further exploration."

The results mark an important step forward in secondary prevention strategies for ICH survivors, exploring improvement of long-term outcomes through inflammation-targeted therapy. Having established feasibility through CoVasc-ICH, the trial's investigators are now pursuing the phase III CoVasc-ICH 2 (NCT06587737) randomised trial designed to test the effect of colcichine on major adverse cardiovascular events and functional outcome in patients with acute ICH.

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References:

1. Katsanos, A., et al. *Colchicine for the prevention of vascular events after an acute intracerebral hemorrhage (COVASC-ICH).* Presentation O193, presented at the European Stroke Organisation Conference; 23 May 2025; Helsinki, Finland.

2. Murthy SB, Diaz I, Wu X, et al. Risk of Arterial Ischemic Events After Intracerebral Hemorrhage. *Stroke* 2020; 51(1): 137-42.
3. d'Entremont MA, Poorthuis MHF, Fiolet ATL, et al. Colchicine for secondary prevention of vascular events: a meta-analysis of trials. *Eur Heart J* 2025.

For further information, please refer to the slides here.

Striking the balance on blood thinners after brain Bleeds: Results from the STATICH trial

(Friday, 23 May 2025, Helsinki, Finland) Doctors have long faced a difficult dilemma: Should patients who have suffered a haemorrhagic stroke – a bleed in the brain – and who also have a strong medical need for blood thinners be given these medications, despite the potential risk of triggering another bleed?[1]

A lack of solid evidence leaves physicians with no clear guidelines, forced to weigh benefits and risks on a case-by-case basis, often feeling like they're walking a tightrope. "There have been considerable advances in treating patients with strokes caused by blood clots, but far less attention has been paid to those whose strokes are caused by bleeding," says Dr. Eilertsen, who is presenting findings from the STudy of Antithrombotic Treatment after IntraCerebral Haemorrhage (STATICH) at the European Stroke Organisation Conference (ESOC) 2025.[1] "With this study, we set out to answer a fundamental question: Do we help or harm patients by giving them blood thinners after a brain bleed?"

In the trial, 134 patients who experienced a haemorrhagic stroke and had a strong medical reason to take blood thinners, such as atrial fibrillation or a history of clot-related stroke, were randomly assigned to either receive or not receive blood-thinning treatment. The specific type of medication was selected based on each patient's clinical needs.

Professors Ole Morten Rønning and Torgeir Bruun Wyller, both from the University of Oslo, led the study, which was funded by the Oslo University Hospital and the results will be unveiled during the Closing Ceremony & Large Clinical Trials 2 session (11:35 EEST on Friday 23 May) at ESOC 2025. With no current consensus on what to do in these complex cases, data from randomised trials are urgently needed to help clinicians worldwide make safer, more evidence-based decisions.

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References:

1. Eilertsen, H., et al. *Should antithrombotic treatment be prescribed after an intracerebral haemorrhage? Main results from the study of antithrombotic treatment after intracerebral haemorrhage (STATICH).* Presentation O194, presented at the European Stroke Organisation Conference; 23 May 2025; Helsinki, Finland.

For further information, please refer to the slides here.

Emergent carotid stenting for acute ischemic stroke with tandem lesions: The multicentre CERES-TANDEM study

(Friday, 23 May 2025, Helsinki, Finland) A real-world cohort of 4,053 patients suggests that adding emergent carotid artery stenting (eCAS) to endovascular thrombectomy (EVT) for anterior circulation tandem-lesion stroke may associate with improvement in 90-day functional outcomes without increasing symptomatic intracranial haemorrhage, supporting eCAS as a safe and effective adjunct in acute stroke care.[1]

Tandem lesions – simultaneous high-grade extracranial carotid stenosis or occlusion with intracranial vessel occlusion – occur in up to 20% of large-vessel strokes but were largely excluded from major randomised thrombectomy trials. Optimal management of the extracranial carotid segment during EVT has remained uncertain, with observational studies offering mixed signals on benefits versus haemorrhagic risk.

The CERES-TANDEM study is an international, multicentre, cohort analysis of consecutive adults treated for anterior circulation tandem lesions between 1 January 2018 and 31 December 2024 at 49 comprehensive stroke centres across Europe, North America, and Singapore. Of 4,053 patients (median age 70 years; 65% women), 2,522 underwent emergent carotid stenting during EVT and 1,531 were treated with thrombectomy alone. Stabilised inverse-probability-of-treatment weighting (IPTW)–weighted ordinal logistic regression compared 90-day modified Rankin Scale (mRS) outcomes between strategies.

The key results, presented at the European Stroke Organisation Conference (ESOC) 2025, were:

- Improved functional recovery: eCAS was associated with a 31% higher odds of a 1-point shift toward better 90-day mRS (common OR 1.31; 95% CI 1.17–1.47; p<0.001).
- Better rates of independence: Odds of achieving mRS 0–1 increased by 27% (OR 1.27; 95% CI 1.08–1.50; p=0.005), and mRS 0–2 by 30% (OR 1.30; 95% CI 1.13–1.51; p<0.001).
- Recanalisation success: Complete or near-complete recanalisation (TICI 2b–3) rose from 75.9% without stenting to 90.9% with eCAS (OR 3.09; 95% CI 2.53–3.77; p<0.001).
- Haemorrhagic safety: No significant increase in symptomatic intracranial haemorrhage was observed (OR 1.21; 95% CI 0.93–1.56; p=0.15).
- Consistency across analyses: Estimand-based direct-effect and principal-stratum analyses confirmed the robustness of functional benefits.

“Emergent carotid stenting alongside thrombectomy for tandem-lesion stroke yielded more complete recanalisation and significantly improved 90-day outcomes”, said Michele Romoli, MD, PhD, of the Bufalini Comprehensive Stroke Center in Cesena, Italy, who led the study with Francesco Diana (Vall d’Hebron Research Institute, Barcelona) and Than N. Nguyen (Boston University and Boston Medical Center).“Crucially, even after adjusting for recanalisation status, stenting remained a strong predictor of better function without increasing symptomatic haemorrhage.”

CERES-TANDEM provides observational evidence that emergent carotid stenting during EVT for tandem-lesion stroke enhances functional outcomes without a prohibitive

haemorrhagic risk. These real-world results fill a critical knowledge gap and support adoption of eCAS in acute stroke cases with tandem lesions, while awaiting prospective trial validation.

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References:

1. Romoli, M., et al. *Emergent carotid stenting in tandem occlusions of anterior circulation: the multicentre CERES-TANDEM study.* Presentation O197, presented at the European Stroke Organisation Conference; 23 May 2025; Helsinki, Finland.

Individualised blood pressure management during mechanical thrombectomy shows no benefit over standard approach

(Friday, 23 May 2025, Helsinki, Finland) The randomised controlled DETERMINE trial presented today at the European Stroke Organisation Conference (ESOC) 2025 found that individualised blood pressure (BP) management during mechanical thrombectomy (MT) for patients with anterior large vessel occlusion (LVO) stroke did not lead to improved functional outcomes at 90 days compared to the current standard of care.[1]

Despite high rates of successful reperfusion, nearly half of all patients undergoing MT for acute ischemic stroke due to anterior LVO experience poor outcomes. One potential contributor is suboptimal BP management during the procedure (i.e., before reperfusion). Current guidelines apply a uniform BP threshold to all patients, disregarding individual physiological differences that may influence cerebral perfusion. In general surgery, the randomised INPRESS trial demonstrated that an individualised BP management was superior to standard BP management in reducing a composite outcome of organ dysfunction.[1]

DETERMINE was a multicentre, open-label, blinded-endpoint, randomised controlled trial at eight academic comprehensive stroke centres in France designed to assess whether an individualised BP management during MT (mean arterial pressure [MAP] maintained within 10% of the first MAP measured before MT) improves 90-days functional outcome in patients undergoing MT for anterior LVO. From March 2021 to September 2023, 433 patients were randomised to either an individualised BP group (n=215) or the control BP group (n=218).

After 90 days, favourable functional outcome (modified Rankin Scale score of 0–2) was observed in 44.2% of patients in the individualised BP group versus 48.8% in the control group. This difference was not statistically significant (adjusted odds ratio, 0.82; 95% CI, 0.54–1.24; p=0.34). Mortality and rates of symptomatic intracranial haemorrhage were also comparable between the two groups.

Prof. Benjamin Maïer, the principal investigator of DETERMINE, commented, “The results of the DETERMINE trial highlight several key points. First, they underscore the feasibility challenges of maintaining BP within narrow limits during MT, confirming findings from the INDIVIDUATE and IDEAL trials. Second, hemodynamic control in the standard care group (SBP within 140-180 mm Hg) seems adequate, limiting BP variability compared to the individualised group. Further randomised studies will be needed to define the optimal hemodynamic targets during MT, potentially involving alternative agents to norepinephrine or individualised management strategies.”

“Overall, while hemodynamic control during MT seems necessary, the current findings suggest that any potential benefit of individualised BP management on functional outcome is likely modest and should not delay or restrict access to MT which remains the most critical factor influencing clinical outcome”.

In conclusion, although an individualised BP management during MT did not improve 90-day outcomes, the findings provide important evidence to guide intra-procedural blood pressure

management and reinforce current recommendations, which emphasise maintaining systolic BP within a defined range during MT to avoid hypotension-related harm without complicating clinical protocols.

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References:

1. Maïer B, Gory B, Chabanne R, et al. *Individualized versus standard blood pressure control during mechanical thrombectomy for anterior acute ischemic stroke (DETERMINE): a randomised, open-label, phase 3, superiority trial.* Presentation O198, presented at the European Stroke Organisation Conference; 23 May 2025; Helsinki, Finland.
2. Futier E, Lefrant JY, Guinot PG, et al. *Effect of Individualized vs Standard Blood Pressure Management Strategies on Postoperative Organ Dysfunction Among High-Risk Patients Undergoing Major Surgery: A Randomized Clinical Trial.* JAMA. 2017;318(14):1346-1357. doi:10.1001/jama.2017.14172

IRIS trial demonstrates promise for interleukin-6 receptor inhibition in acute ischemic stroke patients undergoing endovascular treatment

(Friday, 23 May 2025, Helsinki, Finland) At the European Stroke Organisation Conference (ESOC) 2025, researchers from Xuanwu Hospital Capital Medical University, Beijing, China, presented groundbreaking results from the IRIS trial, a multicentre, double-blind, randomised, placebo-controlled phase 2 study investigating the efficacy and safety of interleukin-6 (IL-6) receptor inhibition in patients with acute ischemic stroke undergoing endovascular treatment (EVT).[1]

Despite the high efficacy of EVT for treatment of large vessel occlusion (LVO), many patients suffer from significant neurological deficits despite this treatment. Therefore, there is a critical need for effective neuroprotective strategies to further improve outcomes. Tocilizumab, an IL-6 receptor antagonist, has shown neuroprotective potential in preclinical studies.

From February to June 2024, the IRIS trial enrolled 108 patients with acute ischemic stroke caused by anterior circulation LVO. Participants were randomised to receive either a single intravenous dose of tocilizumab (240 mg) or placebo within 24 hours following stroke onset, in addition to standard EVT. The primary endpoint was the change in infarct volume at 72 (±12) hours post-treatment, as assessed by an independent core laboratory. Secondary endpoints included 90-day functional independence, as defined as modified Rankin Scale score ≤2, early neurological improvement, and safety outcomes.

The study showed a significant reduction in infarct volume in patients receiving tocilizumab plus EVT compared to those receiving placebo plus EVT. The incidence of all-cause death and serious adverse events were similar between the two groups, suggesting a similar safety profile.

“These results support the potential of tocilizumab as an adjunctive therapy to EVT in acute ischemic stroke, addressing a critical unmet need and paving the way for future large-scale trials”, said Dr. Xuehong Chu on behalf of the IRIS investigators.

The IRIS trial marks a significant step toward establishing a novel therapeutic strategy for acute ischemic stroke. Further research in larger trials is warranted to confirm these results and to establish the role of IL-6 receptor inhibition in acute stroke.

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References:

1. Wu, C. et al. Effect of interleukin-6 receptor inhibition in patients with ischemic stroke undergoing endovascular treatment (IRIS). Presented at the European Stroke Organisation Conference; 23 May 2025; Helsinki, Finland.

For further information, please refer to the slides here.