Report on the European Stroke Organisation Conference (ESOC) 2025

Helsinki, Finland

The 2025 European Stroke Organisation Conference (ESOC), held in Helsinki, brought together over 4,000 professionals from more than 100 countries, affirming its status as the premier European event for stroke research and care. The conference featured pivotal trial results poised to shape clinical practice, with a particular focus on acute ischemic stroke management, secondary prevention, rehabilitation, and future neuroprotective strategies.

Acute Ischemic Stroke: Refining the Role of Thrombolysis and EVT

One of the central debates in stroke care is the role of bridging intravenous thrombolysis (IVT) versus direct endovascular treatment (EVT) in patients with large vessel occlusion (LVO). The BRIDGE-TNK trial added evidence in favour of bridging with intravenous tenecteplase (TNK). Conducted in China and including 278 patients, it showed a higher rate of functional independence (mRS 0–2) in the TNK + EVT group (54% vs. 44%, p = 0.04) without increased safety concerns. A future BRIDGE-TNK EXTEND trial is planned to assess the efficacy of this approach up to 24 hours after stroke.

The ASSET-IT trial explored the utility of tirofiban after IVT. Excluding patients with atrial fibrillation and extensive ischemia, the trial showed a significant increase in excellent outcomes (mRS 0–1) at 90 days with tirofiban (RR 1.20, p = 0.001), particularly in older adults and those with more severe strokes. This trial was also conducted in China and further research on targeted pharmacologic adjuncts is needed to confirm the generalisability of this therapy.

The TENCRAOS trial for central retinal artery occlusion (CRAO) showed that IV TNK (0.25 mg/kg) did not improve visual outcomes compared to aspirin and was associated with more adverse events. The results of this trial underscore the continuing challenge in developing effective treatments for ocular stroke.

The OPTIMIST-main trial provided practice-changing evidence around post-thrombolysis care. In this large multicentre trial of nearly 5,000 patients with mild to moderate strokes, low intensity monitoring post-IVT was found to be non-inferior to standard intensive monitoring. This could significantly reduce resource use and potentially healthcare costs without compromising clinical outcomes, although implementation may depend on local infrastructure.

Evolving Role of EVT in Medium Vessel Occlusions and Pre-Hospital Care

Two subanalyses from the DISTAL and ESCAPE-MeVO trials explored EVT in medium vessel occlusions (MeVO). DISTAL showed that EVT led to more brain tissue salvage than best medical therapy alone, while the ESCAPE-MeVO findings highlighted the importance of collateral status and early treatment—suggesting EVT may be beneficial in patients with good collaterals treated within 3 hours, but may be potentially harmful beyond that window.

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Pre-hospital care innovation was exemplified by the MSU-TELEMED trial from Australia, which found that telemedicine-guided mobile stroke units were as safe and more cost-effective than conventional MSUs staffed with neurologists. This model is set to expand in Melbourne, potentially transforming stroke systems of care.

Secondary Prevention and Global Innovations

The secondary analysis of the CONVINCE trial emphasized the potential of targeting inflammation to prevent recurrent stroke. Patients treated with colchicine who achieved CRP suppression below 2 mg/L had fewer recurrent cardiovascular events. While promising, these results need confirmation in larger trials before they can be adopted in practice.

The PINGS trial was an innovative trial conducted in Ghana, which tested a nurse-led mobile phone-based intervention for blood pressure control after stroke. This simple, scalable strategy significantly improved hypertension management, and offers a model for resource-limited settings which are facing the public health challenge of a steadily rising incidence of stroke.

Anticoagulation and CVT: A Step Toward Clarity

The EXCOA-CVT trial presented interim data comparing short (3–6 months) and long (12 months) term anticoagulation following cerebral venous thrombosis. In over 1,200 participants across randomized and observational arms, no significant differences in thrombotic or bleeding outcomes were observed at one year. Continued follow-up is planned to assess late recurrences.

Stroke Rehabilitation: Cost savings, Productivity and Falls Prevention

Several rehabilitation trials provided high-quality evidence to refine rehabilitation after stroke. A study from Australia found that structured in-hospital discharge planning was as effective as pre-discharge home visits by occupational therapists in promoting patient activity post-stroke. This finding supports resource-efficient discharge models without compromising patient satisfaction or functional outcomes.

The FAST study demonstrated clear benefit from personalized, home-based exercise programs to reduce post-stroke falls by 33% at one year, along with improved mobility and confidence. These findings support the need for individualized rehabilitation strategies to prevent falls, secondary injury and enhance recovery.

The ESTREL trial evaluated levodopa as a pharmacologic enhancer of physical rehabilitation but found no meaningful improvements in motor outcomes. Pharmacological augmentation of physical rehabilitation after stroke remains elusive.

Looking Ahead: Neuroprotection on the Horizon?

The IRIS phase II trial introduced promising early results for neuroprotection during EVT. Tocilizumab, an IL-6 inhibitor, was associated with reduced infarct growth on imaging at 72 hours, though this study did not assess functional outcomes. Continued exploration of this anti-inflammatory agent as a neuroprotectant during acute stroke is warranted.

Conclusion

ESOC 2025 delivered a vibrant platform for evidence-based updates in stroke care, showcasing trials with immediate clinical implications and pointing toward future innovation. As the field continues to evolve, collaborative, high-quality research will be essential in addressing the growing global burden of stroke. Global and European cooperation through the ESO community is an important means to achieve this shared goal.

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