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The virtual ESO-WSO 2020 Conference, jointly organised by the European Stroke Organisation and the World Stroke Organization, presents latest stroke research results and developments across the entire care spectrum – from acute intervention to secondary prevention.

RACECAT Trail: 'Direct Transfer to Endovascular Center of Acute Stroke Patients with Suspected Large Vessel Occlusion in the Catalan Territory': Do acute stroke patients with RACE scale-based suspicion of LVO have a more favorable outcome when transferred directly to an Endovascular Center, as compared to standard transfer to closest Local Stroke Center? Results of the 1'401 patients finally included in the trial will be presented.

BASICS: Given the insufficient evidence for the effectiveness of endovascular therapy (EVT) in stroke caused by basilar artery occlusion (BAO), the aim of the 'Basilar Artery International Collaboration Study' (BASICS) was to assess efficacy and safety in a randomized controlled trial. The trial showed that overall, endovascular therapy in patients with basilar artery occlusion is safe, but without statistically significant benefit. A predefined subgroup analysis showed a possible effectiveness of EVT in patients with a more severe deficit, however.

REDUCE Trial: 'GORE® Septal Occluder Device for Patent Foramen Ovale (PFO) Closure in Stroke Patients': The long-term efficacy and safety of closure of patent foramen ovale (PFO) for secondary prevention after cryptogenic stroke is not well established. A 5-year follow-up was conducted to determine whether occlusion of PFO plus antiplatelet therapy is superior to antiplatelet therapy alone to reduce the risk of subsequent ischemic stroke. Long term efficacy and safety results will be presented, including risk of recurrent stroke and atrial fibrillation.

The ***Virtual ESO-WSO 2020 Conference*** is the largest and most important congress on stroke to date. This congress is the place to discover and discuss the latest stroke clinical trial results and to hear directly from the Principal Investigators on their studies. More than 300 speakers from all over the world are presenting their stroke expertise and research in more than 100 sessions.

A UNITED VOICE FOR STROKE

Co-Chair of the Conference Planning Group, Prof Jesse Dawson, warmly welcomed the participants: "Welcome to the joint European Stroke Organisation and World Stroke Organization Conference (ESO-WSO 2020)! This is not just our first joint conference but also our first virtual meeting." And Co-Chair of the Conference Planning Group, Prof. Michael Brainin, mentioned: "It has been a busy few months! We will have over 600 presentations and over 1,100 e-posters." More than 5,000 neurologists and other experts in the treatment and care of stroke patients, from all over the world, will be attending the interesting virtual ESO-WSO 2020 Conference.

This is an opportunity to be part of a new level of collaboration across Europe and the World.

The opening plenary included presentations on the studies and results outlined below.

RACECAT-Study

Endovascular stroke therapy has substantially improved the outcome of patients with severe strokes and large vessel occlusion. Controversies about the best prehospital transfer protocol of patients with suspected large vessel occlusion, however, are still ongoing. RACECAT, presented at the 2020 ESO-WSO Congress, provides first evidence from a randomized controlled trial - comparing the clinical outcome of patients directly transferred to the endovascular stroke centre (EVT-SC; mothership concept) versus those admitted to the closest local stroke centre (Local-SC) and subsequently transferred to the endovascular stroke centre (drip and ship concept). It is a superiority trial with blinded outcome assessment 90 days after the stroke.

RACECAT (Direct Transfer to Endovascular Center of Acute Stroke Patients with Suspected Large Vessel Occlusion in the Catalan Territory) was conducted in Catalonia between March 2017 and June 2020 and stopped after the second pre-specified interim analysis. Among 7.475 patients with EMS Stroke Code activation, the RACE score was assessed in all but 536 and 1.401 patients with a RACE score ≥ 5 were finally eligible for the trial and randomized to either the Local-SC or EVT-SC group. Median arrival at the Local-SC was 142 minutes and that in the EVT-SC 216. About one fifth of the patients included had an intracerebral haemorrhage and 46% had a confirmed large vessel occlusion ischemic stroke. The median NIHSS on arrival to first admitting hospital was 17 in both groups.
The proportion of patients receiving intravenous thrombolysis was significantly higher in the Local-SC than in the EVT-SC group (60.4% versus 47.5%, $p < 0.001$), corresponding to the earlier arrival, whereas the proportions of patients receiving endovascular stroke therapy was higher in the EVT-SC group (50.0% versus 40.9%, $p = 0.003$). The “time from symptom onset to intravenous thrombolysis” was 120 minutes in the Local-SC group versus 155 minutes in the EVT-SC group and “time from symptom onset to groin puncture” was 270 and 214 minutes, respectively.
The primary efficacy outcome was the shift analysis of the modified Rankin Scale (mRS) in the intention-to-treat population (ischemic stroke patients only). Distributions of the mRS categories at 90 days were exactly the same in both intervention groups with a common odds ratio of 1.0 and the superiority endpoint was thus not met. This key finding was consistent in various subgroups.

Main conclusions
Pre-hospital EMS Code assessment in patients with suspected stroke using the RACE score is feasible and highly predictive of large vessel occlusion. Both prehospital transfer protocols (mothership versus drip and ship) worked equally well in this long awaited for high-quality randomized trial.
Congratulations to the team in Catalonia for successfully running and finishing this challenging trial!

BASICS

Endovascular therapy following occlusion of the basilar artery in the brain

In a subgroup of acute stroke patients with a vascular occlusion of the basilar artery in the brain – an event with historically a poor prognosis – a catheter intervention (endovascular therapy/EVT) for eliminating the occlusion (removal of the clot or dissolution of the clot through thrombolysis) could be advantageous. This was one of the findings of the international BASICS trial involving 300 patients.

The background story: In recent years, catheter interventions following major ischaemic strokes have greatly improved the prognosis for this acute disorders. Until now, however, scientifically proof for benefit existed only for patients with an ischaemic stroke in the anterior cerebral arteries. A single controlled, randomised clinical trial from China on basilar artery occlusion (BAO) in the posterior circulation has shown possible but not certain efficacy.

Between December 2011 and December 2019, a total at 300 patients from seven countries were accepted into the BASICS trial within six hours of an acute BAO. 154 of the patients were randomly assigned to endovascular therapy (EVT) in addition to the established best medical management (BMM). The control group of 146 patients received only BMM. The majority (79%) of all patients were given a prior course of the current standard therapy, intravenous thrombolysis (IVT) as part of BMM. The average age of the patients was about 67 years; slightly more than two-thirds were men.

As the first author Wouter Schonewille (St. Antonius Hospital/Nieuwegen/NL) explained, the study found no statistically significant difference in the main criterion for judging efficacy: the percentage of patients with a good treatment outcome after 90 days (modified Rankin scale (mRS) with a score < 3, i.e. moderate disability at most) was 44.2% in the EVT group and 37.7% in the control group This absolute risk reduction of 6.5% was not statistically significant. Results were very similar for the secondary out come of “very favourable status” after 90 days: (mRS score < 2, i.e. slight disability at most): 35.1% in the EVT group and 30.1% in the control group.

Regarding safety, mortality within the first 90 days did not differ between the two groups. The rate of intracranial haemorrhaging was low, at 3.9% in the EVT group and 0.7% in the control group; this difference was also not statistically significant.

A subgroup analysis did show, however, that patients with severe symptoms at the time of diagnosis (more than 10 points on the 42-point NIH Stroke Scale) did derive a significantly benefit from EVT when compared to BMM alone. The first author Schonewille said that this finding should be viewed with caution because it involves a subgroup analysis only. Further randomised and controlled studies would have to prove whether EVT can really benefit patients with such severe strokes involving occlusion of the basilar artery.

REDUCE-Trial – long term outcomes

Optimum strategy following cryptogenic stroke and patent foramen ovale

In 15% to 40% of ischaemic strokes, no actual cause can initially be determined. In medical parlance, these unexplained events are called “cryptogenic” strokes. A heart defect known as patent foramen ovale (PFO) is a potential cause of cryptogenic stroke. This is a flap-like passageway that exists in all foetuses, between the left and right upper chambers of the heart (atria), and normally closes during infancy. However, it can persist, allowing thrombi to flow through and reach the brain.

At ESOC 2017, 3 trials announced efficacy of transcatheter PFO closure over medical therapy, including the primary results of the REDUCE trial.

Scott E. Kasner (Department of Neurology, University of Pennsylvania/ Philadelphia) and his co-authors have now presented the long-term results attained in the REDUCE trial, comparing these two strategies.

The REDUCE Study was a randomised and controlled open-label trial that included 664 patients, assigned to these two groups in a ratio of 2:1. The average age of the patients was 45 years and 81% of them had moderate to large interatrial shunts: Two-thirds of patients underwent transcatheter PFO closure involving the insertion of a septal occluder followed by the established therapy with antiplatelet agents to prevent thrombosis (combined therapy group). One third of the patients received just the antiplatelet therapy (control group). Centres in seven countries (Canada, Denmark, Finland, Norway, Sweden, UK and USA) participated in the study. The observation period was five years.

All in all, the combination of transcatheter PFO closure and antiplatelet therapy to prevent thrombosis proved to be significantly more effective in preventing subsequent ischaemic stroke than just the antiplatelet therapy alone: The combination therapy group had a risk of stroke that was 69% lower (hazard ratio of 0.31) than the control group (exclusively antiplatelet preventive therapy).

This translates into a calculated annual stroke risk per 100 patient years of 0.39 for the combination therapy group compared to 1.26 for the control group. Among the 441 participants undergoing transcatheter PFO closure and preventive medical therapy, eight strokes occurred during the period of observation (frequency: 1.8%) whereas among the 223 patients in the control group, 12 strokes occurred (frequency: 5.4 %). The number needed to treat at 5 years was 25. Atrial fibrillation/flutter was significantly more frequent in the closure group. However, persistent or permanent atrial fibrillation occurred in only 2.7% of patients.

The authors concluded that among young patients with cryptogenic stroke and PFO the benefit of closure persists for at least 5 years, with a low risk of complications.

Additional information, including video interviews with principle investigators and summary slides are available on the ESO-WSO 2020 Media Portal https://eso-wso-conference.org/

Issued by the ESO-WSO 2020 PR Committee
For more information or to schedule interviews, please send your request to:
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