News from the International Stroke Conference, 2019

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The International Stroke Conference was held in Honolulu, HI, USA from Feb 6–8, 2019

For more on **RIGHT-2** see **Articles** *Lancet* 2019; published online Feb 6. https://doi.org/10.1016/S0140-6736(19)30194-1)

For more on **ENCHANTED** see **Articles** *Lancet* 2019; published online Feb 7. https://doi.org/10.1016/S0140-6736(19)30038-8

For more on **MISTIE 3** see **Articles** *Lancet* 2019; published online Feb 7. https://doi.org/10.1016/S0140-6736(19)30195-3

Glucose control after stroke

Intensive intravenous glucose control did not improve functional outcome compared with standard insulin control in patients with stroke who have hyperglycaemia—and it may even increase the risk of hypoglycaemia. In the SHINE trial, presented by Karen Johnston (University of Virginia, Charlottesville, VA, USA), 581 patients were randomised to receive intensive intravenous insulin treatment (target glucose concentration 80–130 mg/dL) and 570 patients to subcutaneous insulin every 6 h (target <180 mg/dL). The trial was stopped for futility when 82% of the planned 1400 patients had been enrolled. 119 (21%) patients in the intensive group and 123 (22%) in the standard group reached the primary endpoint of favourable outcome on the modified Rankin Scale at 90 days, adjusted for baseline severity. The risk of hypoglycaemia was significantly greater in the intensive group (15 events, 2·6%) compared with the standard group (0 events).

Prehospital glycerol trinitrate

Ultra-acute blood pressure lowering with transdermal glycerol trinitrate (GTN), administered by paramedics to patients with suspected stroke, did not improve outcome. 1149 patients with suspected stroke were randomly assigned to either transdermal GTN (n=568) or sham treatment (n=581) by 516 paramedics in England and Wales participating in the RIGHT-2 trial. At hospital admission, compared with the sham-treated group, systolic blood pressure was reduced by 5·8 mm Hg in the GTN group and diastolic blood pressure by 2·6 mm Hg. Presenting the results, Philip Bath (University of Nottingham, UK) said there was no difference between the groups in modified Rankin Scale score at 90 days in patients with a final diagnosis of stroke or transient ischaemic attack (adjusted common odds ratio for poor outcome 1·25, 95% CI 0·7–1·6) or in all patients (1·04, 0·84–1·29). RIGHT-2 was published simultaneously in *The Lancet*.

Dual antiplatelets for secondary prevention

Dual antiplatelet therapy with cilostazol plus either aspirin or clopidogrel reduced risk of recurrent stroke with no increase in severe bleeding, according to the results of the CSPS.com study. In the open-label trial from Japan, presented by Kazunori Toyoda (National Cerebral and Cardiovascular Center, Suita, Japan), 1879 patients who had had a stroke and were already taking either aspirin or clopidogrel for secondary prevention were randomised to continue with monotherapy or to receive add-on cilostazol (100 mg twice daily). The trial was stopped early due to slow recruitment (planned sample size 4000). Over a median follow up of 17 months, 29 (2·2%) patients had recurrent stroke in the dual therapy group versus 64 patients (4·5%) in the monotherapy group (hazard ratio 0·49, 95% CI 0·31–0·76). Severe or life-threatening bleeding occurred at similar rates between the groups (0·6% per year for dual therapy *vs* 0·9% for monotherapy, HR 0·66, 95% CI 0·27–1·60)

Blood pressure lowering after stroke

Intensive blood pressure lowering in patients treated with alteplase for acute ischaemic stroke did not lead to a significant improvement in outcome compared with guideline-based blood pressure lowering. In the ENCHANTED study, presented by Craig Anderson (George Institute for Global Health, Sydney, Australia) and Thompson Robinson (University of Leicester, UK), an open-label trial with blinded endpoint evaluation, 2196 patients with acute ischaemic stroke were randomised to receive intensive blood pressure lowering (n=1081, target 130–140 mm Hg within 1 h) or guideline-based blood pressure lowering (n=1115, target <180 mm Hg). The treatment led to a modest 5 mm Hg difference in blood pressure between the groups (144·3 mm Hg *vs* 149·8 mm Hg) and there was no difference between the groups in functional status at 90 days on the modified Rankin Scale (unadjusted odds ratio 1·01, 95% CI 0·87–1·17). However, fewer patients in the intensive group (n=160 [14·8%]) than in the guideline group (n=209 [18·7%]) had any intracranial haemorrhage (odds ratio 0·75, 0·60–0·94). The study was published simultaneously in *The Lancet*.

Minimally invasive surgery for intracerebral haemorrhage

In patients with supratentorial intracerebral haemorrhage, minimally invasive surgery followed by gentle thrombolysis of the catheterised clot did not lead to improved functional outcome at 1 year. Daniel Hanley (Johns Hopkins University, Baltimore, MD, USA) presented the main results of MISTIE 3, a phase 3 open-label trial with blinded endpoint evaluation, done at 78 sites worldwide. 255 patients were randomly allocated to minimally invasive surgery and 251 to standard medical care. Minimally invasive surgery was safe, with fewer adverse events in the surgery group. According to the primary adjusted efficacy analysis, 45% of patients in the surgery group and 41% of patients in the standard care group achieved a modified Rankin Scale score of 0–3 at 365 days (adjusted risk difference 4%, 95% CI −4 to 12). MISTIE 3 was published simultaneously in *The Lancet*.

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