

The man of letters Samuel Johnson is quoted as saying “when a man is tired of London, he is tired of life; for there is in London all that life can afford”. He could have been describing the London European Stroke Conference (ESC); for at the 12th ESC there was something for everyone that works in stroke care. The venue was the new ExCeL and a venue of this size was required for the approximately 4,000 delegates, 340 platform presentations and over 1000 posters. A main draw to the ESC is always the large clinical trials session and this review will focus on these platforms. This year there has been sufficient research activity to justify three separate large clinical trial sessions. The mood in the venue was of cautious optimism and the audience were not disappointed, with a number of potentially practice changing results presented.

The INTERACT2 trial studied an early (< 6 hours post ictus) and intensive (target systolic 140mmHg) blood pressure lowering paradigm for intracerebral haemorrhage. Among n=2839 participants, there was a strong trend towards better outcomes with acute blood pressure (BP) intervention OR:0.87 (95%CI: 0.75-1.01). All pre-specified secondary endpoints were significantly positive or had strong trends in favour of treatment, including an ordinal analysis of mRS which is a more efficient analysis than the dichotomized approach used for the primary outcome in INTERACT2. How should the stroke community interpret these results? Despite all the positive signals, we must be mindful that the study was neutral for its primary endpoint and with two other studies of BP intervention in stroke due to report in next few months, a cautious approach would be to await these data before updating practice guidelines. BP lowering was also a theme of the SPS3 trial. In this study of n=3020 patients with subcortical stroke in the post acute phase, a BP target of <130mmHg systolic was compared against a more conservative (but still low) target of 130-149mmHg. The lower BP arm was associated with a strong trend towards stroke reduction; significant reduction in intracerebral haemorrhage and no increase in adverse events.

Surgical intervention trials were well represented at this year's ESC. The STICH-II study investigated early (<48 hours) neurosurgical intervention for superficial intracerebral haemorrhage in non-comatose patients. A prognosis based outcome analysis was used and primary analysis was neutral across n=601 subjects. There were signals that certain subgroups may benefit from surgery but these come with all the caveats that accompany subgroup analysis and at present routine early surgical intervention is not recommended. The ARUBA investigators compared intervention versus a conservative approach for unruptured cerebral arteriovenous malformations in n=223 participants. There was a significant difference between groups; however this favoured conservative therapy rather than surgical intervention with HR 0.29 (95% CI: 0.15-0.45). Decompressive hemicraniectomy is a proven surgical treatment in ischaemic stroke with hemispheric swelling. Previous studies have been limited to younger subjects and efficacy in older patients was uncertain. The DESTINYII study has added some clarity. Among n=112 patients, mean age 70 (range: 62-82) there was a clear survival benefit associated with hemicraniectomy with a number needed to treat (NNT) of 5. Most subjects were left with substantial disability; however, on questioning 77% of surgical survivors said they did not regret having the treatment. So in summary, while we will be referring fewer bleeds and

vascular malformations we can still keep our neurosurgical colleagues busy with decompressive surgery.

Studies of other important aspects of process of care were described, ranging from hyperacute stroke care through ward based treatment to rehabilitation and discharge. In the hyperacute phase, although we have made substantial progress, there is still scope to improve door to needle times for intravenous thrombolysis. The Berlin based PHANTOM-S study described initial experience with an ambulance based system that included mobile brain imaging and point of care laboratory testing. During periods where the “ASU-ambulance” was used there were reduced door to needle times, increased rates of thrombolysis and improved rates of pre-treatment physiological and laboratory monitoring. Not all eligible subjects could be assessed in the mobile unit and it is interesting that on “intervention” days, benefits seemed to be realised even for those patients who received “usual” ambulance care, perhaps suggesting that it was not only the “ASU-ambulance” that led to improved systems efficiency. Venous thrombosis is recognised as a common complication post stroke. Previous studies have shown limited efficacy of compression stockings for prevention of deep venous thrombosis (DVT). The CLOTS-3 investigators randomised stroke survivors to usual care or a lower limb pneumatic compression device. There were fewer (doppler screened) DVTs in the treatment arm (NNT 28) and positive results were consistent at differing time-points and across secondary endpoints, including mortality. Finally, it was heartening to see a rehabilitation study represented in the large trials platform. The TRACS study was a cluster randomised controlled trial of in-hospital, structured care-giver training. Among 930 carer-patient dyads there was no significant change in measures of extended activities of daily living or caregiver burden. While these results are disappointing, TRACS has demonstrated that multi-centre, complex intervention trials of rehabilitation interventions are possible. We hope to see more of these at future ESC meetings.

There was plenty of excellent material outwith the large clinical trials sessions. Particular themes that emerged in the other oral sessions included using developments in neuroimaging to improve our understanding of cerebral small vessel diseases, the ongoing debate around the role of interventional procedures for large vessel thrombosis and the benefits that can be achieved through marrying the expertise of basic scientists and clinicians. The work presented as poster platforms was of a particularly high standard this year and the facility for the best posters to be described at e-poster terminals was appreciated. At these sessions, pilot and preliminary data with encouraging signals were presented including: novel methods of data management and assessment; xanthine oxidase inhibition as a secondary preventative strategy; and stem-cell based interventions. Perhaps we will see the next phase of these studies presented at a future ESC large trial session. The next ESC is scheduled for Nice, France in summer 2014. (In a shameless piece of self promotion), stroke trainees wanting an update on latest research should also consider the BASP trainees meeting which will be held in Glasgow, UK in spring 2014 – further details to follow.

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