Case Study: Treating Intra-cerebral haemorrhage

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In the UK, intracerebral haemorrhage causes around 10% of strokes but due to its poor prognosis, it accounts for a much higher proportion of deaths. In the 2013 Global Burden of Disease Study, a similar proportion of all deaths were due to intracerebral haemorrhage (5.8%), as ischaemic stroke (6.0%), despite its lower incidence. Studies also suggest that 61-88% of survivors remain dependent on others for day-to-day care. Until recently, there were no proven acute treatments for intracerebral haemorrhage. This lack of effective treatments and poor prognosis may be expected to lead to relative pessimism amongst stroke physicians when dealing with this stroke subtype.

In order to better understand this, we used SSNAP data to see whether given similar baseline characteristics and stroke severity, intracerebral haemorrhage patients were less likely than ischaemic stroke patients to be admitted to higher level care and more likely to have end of life (palliative) care commenced. We found that whilst the decision to admit to higher level care was similar between stroke types, intracerebral haemorrhage patients were far more likely to have palliative care commenced (See figure on next page).

However, the INTERACT2 trial published in 2013 demonstrated that reducing systolic blood pressure to 140 mmHg within 1 hour of starting treatment in patients presenting within 6 h of symptom onset leads to a reduction in disability at 90 days and improvement in quality of life scores. This intervention is now recommended in the 2016 update of the RCP guideline (www.strokeaudit.org/guideline) and for the first time offers an acute treatment for intracerebral haemorrhage. Along with rapid reversal of anticoagulants in the 10-20% of patients presenting on these medications and referral of carefully selected patients to neurosurgery, blood pressure lowering can be considered part of a bundle of interventions specific to intracerebral haemorrhage that if delivered consistently and effectively will improve outcomes and change perceptions of patients after this type of stroke.

Ongoing phase 3 clinical trials are testing new interventions for intracerebral haemorrhage, including minimally invasive surgery combined with clot lysis (MISTIE III) to remove the haematoma and tranexamic acid to reduce the risk of further bleeding within 8 h of onset (TICH-2). It is thus hoped that further treatments will become available in the near future, leading to additional improvements in the outcomes of this often devastating form of stroke.

Figure: Forest plot demonstrating associations between stroke subtype and acute care decisions *Adjusted for sex, age (per 10 years), premorbid modified Rankin score, comorbidities of congestive heart failure, hypertension, atrial fibrillation, and diabetes, previous stroke/TIA, Level of consciousness (NIHSS 1a), and arrival (onset if onset in hospital) out of hours. †Additionally adjusted for neurological deterioration in first 7 days (defined as increase in NIHSS 1a ≥ 1 compared to baseline).