

Evaluation of the Aintree Stroke Alert System (SAS) – an elite multidisciplinary ‘brain attack’ team

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Aims

The Aintree SAS was instigated with the intention of safely and swiftly administering thrombolysis for all patients presenting with a stroke onset time within 4.5 hours. With the target ‘door to needle time’ for thrombolysis of less than 60 minutes, we wanted to assess whether we have achieved that aim and if we have done so without compromising patient safety.

Methods

We compared key parameters from the RCP's Sentinel Stroke National Audit Programme (SSNAP) for patients who were thrombolysed prior to the instigation of the Aintree SAS and the cohort thrombolysed following its advent. Indicators measured included: time to stroke physician assessment, time to brain imaging, time to thrombolysis, and mortality/morbidity.

Results

Median time to stroke physician assessment prior to the Aintree SAS was 78 minutes; since the change it is now 8 minutes ($p < 0.001$). Median time to brain imaging being carried out before was 35 minutes; since the SAS it is 26.5 minutes ($p < 0.001$). Median time to thrombolysis was initially 73 minutes; after the change 42.5 minutes ($p < 0.001$). There was a slight reduction in the median time taken to be transferred to a specialist stroke unit, at 49.5 and 43 minutes respectively ($p = 0.269$).

Morbidity and mortality outcome data following thrombolysis were essentially unchanged between the two cohorts, before and after the adoption of the SAS. Although statistically non-significant, there was a small reduction in deaths on the stroke unit (14% compared to 13%) and also a slight improvement in the functional status at discharge (median modified Rankin score of 2 compared to 2.5).

Crucially, the shortened ‘door to needle’ times does not appear to have conferred an increase in iatrogenic complications of thrombolysis. There has in fact been a

reduction in the percentage of complications associated with thrombolysis, 9% before the SAS compared to 8% after it.

Conclusions

The Aintree SAS has led to a statistically significant reduction in the time taken for patients with ischaemic stroke in north Liverpool to be reviewed by a stroke physician, have brain imaging and, most important of all, receive thrombolysis. ■

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