

Speedier treatment and better outcomes for high volume stroke centers

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Treatment is faster and outcomes are better at stroke centres dealing with a high volume of [patients](#), finds research published online in the *Journal of NeuroInterventional Surgery*.

The authors base their findings on 442 patients treated with endovascular therapy—clot busting treatment provided inside the brain via a catheter without the need for surgery—at nine specialist (tertiary) stroke centres between September 2009 and July 2011.

All the patients, whose average age was 66, arrived at the centres within eight hours of the start of their symptoms. They all had a blood clot in a major brain artery, which had cut off blood supply and caused their stroke.

The researchers collected information on age and sex, and risk factors likely to affect the success of treatment, such as high blood pressure, abnormal heart rhythms (atrial fibrillation), diabetes, and high cholesterol.

They also looked at other key factors, including the size and location of the clot, the time taken before treatment was given, and how quickly blood flow was restored (reperfusion).

The data showed that the average time to the start of treatment—insertion of a catheter through the groin—after a CT scan of the brain, and injection of the clot buster drug into the affected artery, to

completion of the procedure, was 95 minutes, on average.

The researchers then looked at whether the stroke centres were high volume facilities, defined as carrying out more than 50 such procedures a year.

Around half the patients (49%) were treated in under 95 minutes, with most of these (80%) treated at high volume centres; the remaining 20% were treated at low volume centres.

Looking only at patients referred from within the hospital, only 20 of the 112 patients treated at the low volume centres would have met the recommended 120 minute door to needle time, which is considered essential for boosting the chances of survival.

This compares with 40 out of 100 patients referred from within the hospital at high volume treatment centres.

Just over half (52%) of patients were transferred from another hospital. Although there was no difference in overall procedure times between them and those referred from within the same facility, they did start their treatment sooner.

A higher proportion of patients from other facilities were referred to a high volume centre, where they were more likely to be given clot-busting drugs, and to receive faster [treatment](#) for each of the steps involved.

They were 86% more likely to survive and 82% more likely to have blood flow successfully restored in the affected artery. Delays in reperfusion are critical: for every 30 minutes of delay, the chances of survival fall by 12%, say the authors.

"Centers that currently perform higher numbers of [endovascular stroke]

procedures appear to have lower times to reperfusion, and a higher proportion of patients with successful [reperfusion](#), translating into improved [clinical outcomes](#)," they conclude.

More information: Higher volume endovascular stroke centers have faster times to treatment, higher reperfusion rates and higher rates of good clinical outcomes, Online First, doi 10.1136/neurintsurg-2011-010245

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