

Stroke Case Study

Stroke is the most common life threatening neurological condition, the third biggest cause of death, and the largest single cause of severe disability in the UK. Each year more than 120,000 people in England will suffer from a stroke. Research into better ways of identifying and managing the risk factors, and improving the treatment of people who have a stroke are vital, and the NIHR HTA programme has commissioned key studies to meet this need...

Background

The annual cost to the NHS is over £2.8 billion (Department of Health, National Stroke Strategy, 2007) and the burden of stroke is projected to increase, as the proportion of older people in the population is set to rise. The total number of new strokes each year is projected to increase considerably and by 2020, in the developed world, stroke is estimated to account for six per cent of the total burden of illness.

In 2007 the Department of Health launched the National Stroke Strategy which sets out what needs to be done to address health inequalities and achieve the necessary advancements in stroke services over the next ten years. It is intended to provide a 'quality framework' to secure improvements to stroke services, to provide guidance and support to commissioners, strategic health authorities, and social care, as well as informing the expectations of patients and their families by providing a guide to high quality health and social care services.

Adding to the evidence base

Research by the HTA programme has added significantly to the evidence base in the areas of prevention and screening, treatment and rehabilitation of stroke. These include screening for atrial fibrillation, treating high blood pressure and other factors associated with stroke, and the rehabilitation and management of people who have suffered a stroke.

HTA research has also played a key role informing NICE guidance in the area of stroke. This includes two reviews on nicotine replacement therapy to aid smokers in smoking cessation (Vol. 6:16 and Vol. 12:2, NICE guidance ref. TA39); and guidance on alteplase for ischaemic stroke (Evidence Review Group report ref: 06/51/01, NICE guidance ref. TA122); and the use of alternative antiplatelet agents for the prevention of



occlusive vascular events in people who have had an ischaemic stroke or a transient ischaemic attack (Vol. 8:38, NICE guidance ref. TA90).

HTA research has also supported the development of a Vascular Risk Management Programme. The findings of a study (Vol. 7:31) into a new strategy for lowering blood pressure to prevent myocardial infarction and stroke informed the National Screening Committee's Diabetes, Heart Disease and Stroke prevention project. This recommended a Vascular Risk Management Programme, in which the whole population would be offered risk assessment that could include measurement of risk factors such as blood pressure, cholesterol and glucose.

Research portfolio

The HTA programme has invested over £6 million from 1993 to August 2008 in the commissioning of 23 studies in the area of stroke. Sixteen of these have published in the influential *Health Technology Assessment* journal series and six are still ongoing, including three clinical trials. Key studies in the portfolio include an investigation into systems of screening for atrial fibrillation in people aged 65 and over, a comparison of stroke units with on ward or at home care, and a £1.4 million clinical trial assessing communication therapy for people with dysarthria or aphasia.

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Prevention and screening research

Seven HTA-funded studies have been commissioned to address the area of prevention. This includes two key studies that addressed lowering blood pressure; a clinical trial which assessed screening for atrial fibrillation (AF); two studies investigating factors which cause the narrowing of arteries including an international trial, currently underway, that is comparing two surgical procedures, carotid endarterectomy and carotid artery stenting, for reducing the narrowing of the carotid arteries; and research that examined imaging techniques for carotid artery stenosis and monitoring people who have suffered a transient ischaemic attack as these groups have a high risk of stroke.

Key research:

2003: HTA research considered a new preventive strategy for lowering blood pressure to prevent myocardial infarction and stroke, suggesting that offering treatment to all people with established cardiovascular disease and above a specified age could have the greatest public health impact (Vol. 7:31).

2005: An HTA clinical trial looking at different systems of screening for AF in people aged 65 and over found that a national programme of opportunistic screening is likely to lead to significantly more cases of AF being identified annually (Vol. 9:40).

2006: HTA research found that less invasive tests such as ultrasound, magnetic resonance angiography, and computed tomographic angiography can be used in place of intra-arterial angiography for monitoring people who have had a transient ischaemic attack (Vol. 10:30).

2007: HTA research assessing self testing and management of oral anticoagulation therapy is effective and safe for long-term and successfully trained patients (Vol. 11:38).

Treatment and management

The HTA programme has funded five studies investigating the treatment and management of stroke patients. These include an investigation of computed tomographic scanning and magnetic resonance imaging after acute strokes, the effectiveness of stroke units for the management of patients who have had a stroke, an evaluation of feeding policies, the effectiveness of drug treatment for acute ischaemic strokes, and the effects of drug therapy for hypertension or hypotension immediately post-stroke.

All volume references relate to the Health Technology Assessment (Health Technol Assess) journal series. A more detailed version of the HTA programme's stroke research portfolio in full is available to view or download via the HTA website, www.hta.ac.uk/casestudy

Key research:

2005: HTA trial found that stroke units were more effective and cost-effective in reducing mortality, institutionalisation and dependence after stroke (Vol. 9:18).

2006: HTA study evaluated feeding policies in patients admitted to hospital with a recent stroke concluded that oral food supplements should be reserved for undernourished patients, and tube feeding patients who can't swallow does not need to begin in the first few days after stroke (Vol. 10:2).

Rehabilitation

Fifty per cent of those who suffer a stroke are left with problems moving and using their arms and legs and speech problems. The HTA programme has recognised that there is a need for research into this area and has commissioned four research projects to address this. This comprises two trials, both underway, evaluating botulinum toxin in the treatment of upper limb spasticity due to stroke; and communication therapy for people with difficulty with motor speech production or difficulty understanding or expressing the spoken or written word, both common problems that can affect stroke patients.

Key research:

2008: The findings of an HTA-funded review suggests that some form of repetitive functional task practice could be effective in improving lower limb function at any time after stroke (Vol. 12:30).

Going forward

The HTA programme is continuing to build the evidence base by working with the Stroke Research Network to encourage researchers to submit proposals for stroke and dementia through its researcher-led funding stream. The funding round closed in January 2008 and resulted in 29 proposals being submitted for review by the programme.

