ABN Policy statement- August 2012

How UK neurologists can and should contribute to the acute care of patients with stroke and transient ischaemic attack

Introduction

The Association of British Neurologists (ABN) strongly endorses the active involvement of neurologists in acute neurology, particularly in the diagnosis and treatment of stroke and transient ischaemic attack (TIA). The purpose of this document is to highlight this, and to discuss the various types of service to which neurologists may contribute.

Background

Stroke is one of the most important neurological conditions. As the third most common cause of death and the commonest cause of adult disability in the UK, stroke consumes a huge amount of healthcare resource and is currently one of the leading conditions on the Department of Health’s agenda. Over the past few years, there have been influential reports on the state of stroke services nationwide, including a National Audit Office report on the effectiveness of service configuration and a National Stroke Strategy, the appointment of a Stroke Tsar, several cycles of national audits aimed at improving the quality and process of stroke care. There has been widespread reorganisation of stroke pathways nationwide, the highest profile probably being the London hyper-acute stroke unit (HASU) model, variations of which are likely to develop, or have already evolved, in other regions.

In response, centres of excellence have been created to oversee the early care of stroke patients and to improve their physical, psychological and social rehabilitation. Many patients’ outcomes may be substantially improved by expeditious treatment with thrombolysis. For this and other reasons, management in a stroke unit reduces mortality and enduring disability, benefiting patients and their families as well as the clinical teams, since length of hospital stay and the need for long term institutional care are also reduced.

In the past the small number of neurologists in the UK, with most based in tertiary referral centres, has limited the involvement of neurologists in the care of patients with stroke. While many significant advances in stroke research have come from Academic Neurology departments most neurologists have typically only seen younger patients with stroke or patients with unusual strokes. This is in sharp contrast to the rest of the world.

The ABN believes that UK neurologists should be at the heart of the revolution in stroke care working closely with colleagues from other specialities such as elderly care medicine, acute medicine and rehabilitation medicine, a position supported by the British Association of Stroke Physicians (see joint ABN/RCP report).

The recent announcement of the formation of Strategic Clinical Networks (SCNs) serves to emphasise the important dual role of neurologists in the care of (i) acute neurological diseases, of which stroke is a prime example (Cardiovascular Disease SCN), as well as (ii) long-term conditions (Mental Health/Dementia/Neurological diseases SCN).
General principles for providing acute stroke/TIA services

Before discussing where neurologists should fit into a modern stroke service, we will set out some general principles:

- Stroke and TIA are neurological emergencies. Rapid treatment may resolve the early brain insult and prevent further events. There must be immediate access 24 hours a day, for patients of all ages, to acute stroke/TIA services. Whether patients with mild stroke and TIA are admitted or not should depend on local circumstances; but their diagnosis and treatment should be in a rapid ‘one stop’ service.
- Inpatient stroke services must be centred on stroke units to achieve the best outcomes. These should be networked with surrounding primary and secondary care services, with rapid patient transfer, telemedicine consultation and image transfer where appropriate, and properly connected with interventional neuroradiology and neurosurgery.
- Stroke services should be as local as reasonable but, so long as they can still be accessed rapidly when necessary, may be sited further away if that results in sufficient numbers of trained specialists being available to provide better 24 hour care to patients.
- Stroke services should encompass all stroke care from onset to rehabilitation and secondary prevention, not just acute assessment and delivery of thrombolysis for example.
- All patients with a possible stroke/TIA must be seen by a suitably trained doctor.
- Patients who have not had a stroke/TIA should be rapidly seen in the appropriate service, if at all possible in the same hospital. No stroke service should merely make two diagnoses – stroke and admit, or non-stroke and forget.
- Neurologists should take on the care of patients who have neurological events mimicking stroke.
- Neurologists should also be able to manage, in association with physicians, many of the general complications of stroke, such as pneumonia, cardiac failure, atrial fibrillation, venous thromboembolism, hypertension, diabetes, urinary infection and depression. After all, these are very similar to complications affecting patients with other acute and serious neurological disorders (such as status epilepticus, Guillain-Barre syndrome etc).
- There must be very much an equal partnership between neurologists and other physicians involved with stroke care, with mutual support, respect and education. Neurologists involved with the stroke/TIA service should work with, educate and learn from other stroke physicians.
- Within a stroke service, there should be a smooth transition to rehabilitation and implementation of long term secondary prevention. Not all neurologists need be involved in stroke services, but every stroke service should have neurologists involved.
- All neurology specialist training Registrars (StRs) must as a minimum undertake stroke training as outlined in the current neurology training curriculum.

How UK neurologists can best contribute to acute stroke and TIA diagnosis and management

Traditionally, UK neurologists have been very well trained to diagnose and treat people with neurological problems, including stroke and TIA. Most have not, until recently, been much involved in acute front door medicine and few have had much training in rehabilitation. All this is changing. While neurologists remain expert in diagnosis and management of neurological
disorders, many are now involved with acute stroke care and acute neurology in general (see “Local adult neurology services for the next decade”, a joint RCP/ABN report). There are many more neurologists than previously, and some are based in District General Hospitals (DGHs) rather than in tertiary centres. It has become more realistic for neurologists to expand their traditional out-patient and ward consultation roles, to contribute to acute neurology (including stroke) in tertiary centres and some DGHs.

Stroke care is much more than just stroke diagnosis and treatment. Many stroke patients are elderly with numerous co-morbidities, and these need managing as well as the stroke. Furthermore, rehabilitation is an essential part of any stroke service. Although UK neurologists have strong early training in general medicine, their competency to manage non neurological problems generally declines with the passage of time and with the accelerating pace of medical advances. Therefore, it would be inappropriate for all neurologists to take over all the general medical care of stroke patients, although many will be competent and maintain their general medical skills.

In the UK, stroke patients are increasingly managed by specialist stroke physicians. Stroke medicine is a GMC approved sub-specialty. All stroke physicians hold a CCT from a parent specialty (e.g. elderly care or neurology) and may have undertaken CCT sub-specialty training in stroke medicine. This training comprises two years, one of which targets core competency, usually easily achievable in most parent specialty training schemes. The second year is the specialist year and defers the CCT date by one year. Therefore, in effect trainees who undertake this are investing one extra year to be better trained and more competitive in the consultant job market.

The most common parent specialty for stroke physicians is elderly care medicine, but Neurology is the second most popular parent specialty involved in stroke care. A smaller number of stroke medicine trainees have come from Clinical Pharmacology, Internal Medicine and Rehabilitation Medicine. Elderly Care Physicians are primarily trained to provide the general medicine involved in comprehensive stroke care, but also contribute to the neurological and rehabilitation aspects. Neurologists are primarily trained to provide the neurological component of comprehensive stroke care, but also contribute to the general medicine and neurorehabilitation. Trainees from any parent specialty benefit from obtaining additional competencies in Stroke Medicine if they undertake sub-specialty training.

Stroke medicine is currently, therefore, one of the best examples of multidisciplinary care. Most of the best performing stroke units have a combination of neurologists and geriatricians working together.

Neurologists provide added value to the teams, particularly in the following ways:

- Up to half of patients referred to neurovascular clinics with suspected mild stroke or TIA do not have a cerebrovascular problem. These patients almost always have a neurological condition, such as migraine or epilepsy; or a functional illness. Similarly, up to one third of patients presenting to a HASU have an alternative primary diagnosis to stroke, which may be neurological or non-neurological.
- Neurologists usually work closely with neurosurgeons and neuroradiologists, and should be able to manage most patients with acute and serious brain disorders. Neurologists contribute greatly to the management of status epilepticus, all the possible causes of coma in the acute stroke situation, intracerebral haemorrhage, expanding cerebellar infarcts, and malignant middle cerebral artery infarction syndrome.
• Neurologists will have had more training in management of urgent neurological conditions mimicking stroke, such as subdural haematoma and brain tumour.
• In the future, some neurologists may train in interventional neuroradiology, as has happened in other countries, and so mimic the pattern of modern cardiology practice.

The present situation

The situation varies considerably across the UK, in part because stroke services are rapidly changing and clinicians are adapting to an evolving situation. For example:
• Glasgow has a well organised stroke centre in the Southern General Hospital, with several neurologists involved. However, surrounding that centre, there are many hospitals with only visiting neurologists.
• Edinburgh has a well-developed telemedicine service, which provides 24 hour advice to the Edinburgh hospitals and the surrounding DGHs in SE Scotland. However, the main hospital for acute admissions in the area (the Royal Infirmary of Edinburgh) does not have a 24 hour service delivered by on site stroke specialists.
• Sheffield has a well-integrated service provided by neurologists and geriatricians, but it is based in a hospital in the city that does not have an A&E department.
• London’s model is of eight HASUs which are either Neurology-led or have close involvement of neurologists in the provision of hyper-acute stroke care”.
• Thrombolysis in east Kent’s three DGH acute stroke units is remotely managed by a single team of stroke geriatricians and neurologists using telemedicine. They also provide a TIA clinic every day of the year.
• In Coventry/ Warwickshire, neurologists run the acute stroke service.
• In Cambridge, there is an integrated team of vascular neurologists and stroke physicians.

Other centres have no neurology involvement at all in the stroke service.

Patients with a possible TIA are routinely seen on the same day in some hospitals, but most are assessed in urgent neurovascular outpatient clinics with a variable number of days between symptoms and assessment, by which time it may be too late to prevent the early strokes, and too difficult to arrange one stop imaging.

Three recommended levels of involvement by neurologists

Level 1: large hospitals with a clinical neuroscience centre

There is no clear definition of a clinical neuroscience centre but in this context we mean a department with five or more neurologists alongside specialist neuroradiology, neurophysiology and neurosurgery. A centre with the right mix of specialists to deal with the entirety of acute stroke care, including the neurological mimics also requires a stroke team of stroke physicians: neurologists, geriatricians and acute physicians. Not all the centre-based neurologists need be in this team – indeed, some are much better placed and trained to provide other important subspecialist services such as neuromuscular, multiple sclerosis and epilepsy.

This stroke team should provide the immediate assessment and care of all possible stroke/TIA patients and have the facility to move non-stroke/TIA cases quickly to the relevant team, preferably in the same hospital (e.g. neurology, neurosurgery, geriatrics, orthopaedics etc). It should deal with cases of ischaemic stroke, intracerebral haemorrhage, and perhaps even...
subarachnoid haemorrhage. The stroke team should be integrated with neuroimaging, neurosurgery and interventional neuroradiology and must be supported by stroke specialist nurses. The patients should be admitted to a designated stroke unit with clearly identified stroke beds staffed to National Stroke Strategy standards. Inevitably such a stroke team will need to operate within or very close to the A&E Department alongside other physicians involved in acute care.

Patients with TIAs should be dealt with in a one stop setting. Stroke patients that need to stay in hospital would move on seamlessly to stroke rehabilitation generally under the care of the same or a broader team. Clearly, the consultant on call for the day, whether neurologist or not, should be on site and always available to help, advise and guide the junior team. StRs in neurology should rotate through this service for training.

All consultants involved should have expertise in the core aspects of care: acute diagnosis, thrombolysis, management of common medical complications, secondary prevention and rehabilitation. Neurologists would generally be expected to provide extra expertise in complex neurological problems whilst (for example) geriatricians could provide extra support managing complex medical problems.

The stroke team should be available 24 hours a day, seeing patients immediately on arrival at the hospital, conducting daily ward rounds and possibly providing a telemedicine consultation and imaging interpretation service (with appropriate neuroradiological support) to surrounding district general hospitals (DGHs).

This model means that consultant and StR neurologists manage other areas of acute neurology, as well as acute stroke. This is a highly appropriate and welcome improvement in providing care to patients.

Given the numbers of stroke patients, there will clearly be more urgent and out-of-hours work for stroke neurologists, than for most of the rest of the neurology service. Job plans must accommodate this work pattern equitably.

**Level 2: DGHs with DGH-based neurologists**

Here it may be difficult to provide a 24hour stroke service and comply with working time regulations, but at least one or more of the local neurologists should be part of an acute stroke/TIA team, providing stroke services at least during day time and maybe at weekends too.

Again a multidisciplinary team should generally be in place, comprising geriatricians, acute physicians and neurologists. If a 24 hour service is not viable, the service must be networked with the level 1 centre with telemedicine/imaging links and fast ambulance transfer where necessary (e.g. for interventional neuroradiology, surgery for intracerebral haemorrhage and hemicraniectomy etc). This will affect the centre workload and must be allotted fairly in job plans. Thrombolysis cases may not necessarily have to be transferred if there is good telemedicine and imaging linkage to the centre.

**Level 3: DGHs with only visiting neurologists**

The hub and spoke model of neurology service provision was essential when there were few neurologists but should become less and less prevalent when DGHs have locally based neurologists. Where this model lingers, it is clear that the visiting neurologist(s) can play little useful part in regular acute stroke/TIA care. If there are no neurologists regularly involved in
acute stroke care, while in no way minimising the contribution made by stroke physicians from other parent specialties, one must question whether such a unit truly provides patient care of a sufficiently high standard to fulfil the demands of modern medicine. At the very least it is recommended that DGH sessions are provided to enable regular stroke liaison ward rounds by the visiting neurologist. The level 1 centre may be able to support the unit by providing 24/7 telemedicine and imaging to the local physicians. However, the viability of such a unit must be questioned. By amalgamating resources between neighbouring hospitals it may be possible to create a Level 2 service that provides better outcomes for the patient population served by the collaborating hospitals.

**Training neurologists in stroke care**

The purpose of training is to produce the next generation of neurologists to serve the needs of patients in the UK. The ABN believes that neurologists should play a prominent part in the management of all neurological conditions. Inevitably, training is evolving in parallel with this aspiration. There is a need to be more available for urgent neurological admissions to hospital, and so the balance of predictable routine work to unselected out of hours and urgent work is changing.

The competency-based 2010 neurology curriculum outlines the mandatory training required in stroke. The neurology specialty advisory committee (SAC) expects all trainees in neurology to have gained experience in acute stroke and TIA management such that they can practise safely at consultant level. The neurology SAC also encourages those trainees who wish to make a significant contribution to stroke care as consultants to undertake the extra year of training required to obtain a CCT in the subspecialty of stroke medicine in addition to a CCT in neurology.

The specialist stroke year is more than just prescribed subspecialty work. There is probably more exposure to assessment and management of unselected neurological presentations than in any other type of neurological attachment currently available. The high volumes of acutely presenting patients mean that trainees are likely to see conditions and complications that may otherwise take years to encounter. Trainees can gain expertise and confidence in the management of other conditions that affect the nervous system, including diabetes, cardio-respiratory disorders and infections, as well as in co-morbidity, drug interactions and complex discharge planning. While not mandatory, undertaking subspecialty training in stroke can contribute substantially to the training of those whose consultant practice will include any degree of acute neurology or stroke management.

The new subspecialty of stroke medicine has its own SAC and, as stated previously, the curriculum is delivered in two years. Trainees cannot obtain a CCT in stroke medicine alone; it must be added on to a parent specialty (neurology, geriatrics, rehabilitation etc). One year is granted for competencies obtained in the parent specialty with a one year specialist stroke year based in a recognised stroke centre. Trainees need to show their attainment of curriculum competence through satisfactory work place based assessments (WPBAs): mini-clinical evaluation exercises (mini-CEX) & case based discussions (CbD).

**SUMMARY OF THE ABN POSITION ON STROKE**

*Neurologists have much to offer in acute stroke care, as well as in acute neurology.*
*Our strengths are in early and accurate diagnosis of stroke and TIA, in the differential diagnosis; in management of the neurological aspects of all of these; and their complications.

*There will remain variations in the degree individual neurologists are involved in stroke, but there should be involvement of some neurologists in each centre.

*The ABN suggests some useful principles and models of stroke care.

*Neurology trainees need a solid grounding in stroke and related neurological conditions, but this will need to be balanced with the many other demands on their training.*Neurology trainees interested in being involved in providing stroke services are encouraged to undertake additional sub-specialty training in Stroke Medicine.