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Dr Catherine Best BSc PhD
Research assistant, University of Edinburgh

Dr Gillian Mead MB BChir MA MD FRCP(Ed)
Reader in geriatric medicine, University of Edinburgh
and honorary consultant geriatrician NHS Lothian

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GPs have pivotal role in care of stroke patients

AUTHORS
Dr Catherine Best
BSc PhD
Research assistant, University of Edinburgh

Dr Gillian Mead
MB BChir MA MD FRCP(Ed)
Reader in geriatric medicine, University of Edinburgh and honorary consultant geriatrician NHS Lothian

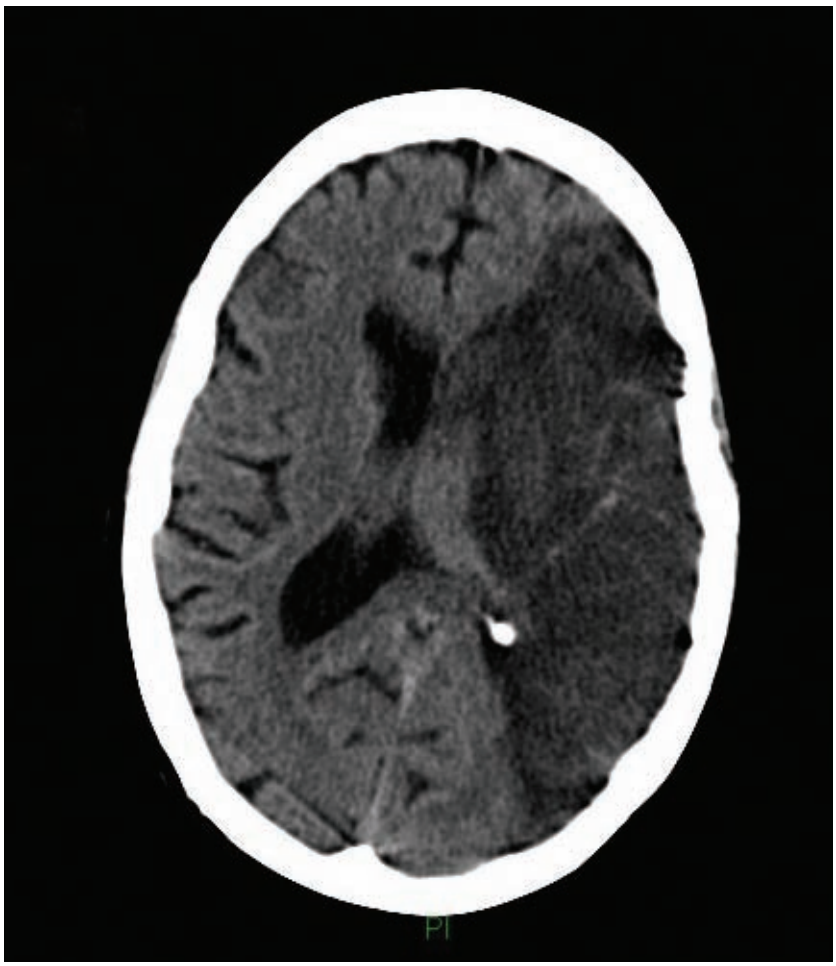


FIGURE 1
CT scan of the brain showing a large left middle cerebral artery infarct

What factors affect outcome after stroke?

What are the key elements of rehabilitation?

Why is exercise so important?

STROKE IS A MAJOR CAUSE OF MORTALITY IN THE COMMUNITY AND THE MOST COMMON cause of disability. The incidence of stroke is between 174 and 216 per 100,000 [1] and in the UK there are 900,000 people living with the effects of stroke.[2] Over the past few years, there have been important developments in our knowledge of stroke. In 2007, the National Stroke Strategy was launched. This strategy covers the entire patient journey. It emphasises that stroke and transient ischaemic attacks (TIAs) are medical emergencies, but also recognises the need for ongoing support and care for those stroke survivors who do not make a full recovery.

GPs play a key role in early recognition of stroke symptoms, thus ensuring that patients receive appropriate acute treatment and early initiation of secondary prevention. It is becoming increasingly recognised that stroke is a chronic disease. GPs will also be central to managing ongoing risk of recurrent stroke, identifying and managing long-term post-stroke problems, providing lifestyle advice and referral to community exercise schemes as these schemes become established. The pivotal role of GPs in the management of stroke patients is reflected by the inclusion of indicators for stroke and TIA in the QOF (see table 1, p32).

PROGNOSIS AFTER STROKE

At one year, a third of patients who have had a stroke have died, and of the survivors, 37% are dependent.[3] The outcome after stroke is highly variable. Being able to predict prognosis for individual patients may allow us to advise patients and their families and to plan treatment more effectively. The two key questions that are frequently asked are: Will I die? Will I regain my independence? There has therefore, been considerable interest in developing models to predict important outcomes such as death and dependency. For example, one model was developed using the Oxfordshire Community Stroke Project data and includes six »

simple variables: age, dependency and living alone before the stroke and ability to lift arms off the bed, talk normally and walk independently after the stroke.[4,5]

It has been externally validated and has been used to adjust for case mix in national audits. Another more recently developed model includes age and stroke severity.[6,7] While both models are useful for case stratification for research purposes neither is good enough to predict prognosis for individual patients.[8]

In practice, healthcare professionals usually explain to patients and relatives that neurological deficits generally do improve over time, that it is difficult to predict with any certainty the outcome for individual patients, and that the more severe a stroke, the less likelihood there is of a full recovery.

Later, as the rate of recovery begins to plateau, which may be weeks, months or occasionally years after stroke onset, it becomes easier to predict likely outcome.

Clearly, prognosis after acute stroke is also determined by whether patients receive appropriate treatment. In the acute phase of ischaemic stroke, this includes:

- thrombolysis (within 4.5 hours of stroke onset)
- aspirin (within 48 hours of onset)
- early access to stroke unit care.

GPs play a key role in ensuring that patients with stroke symptoms receive urgent specialist assessment of eligibility for thrombolysis.

There is also strong evidence that care in a stroke unit significantly reduces the risk of death or dependency for patients with haemorrhagic and ischaemic stroke, irrespective of stroke severity.[9] There are likely to be many reasons why stroke units are effective; undoubtedly, inpatient rehabilitation is a key component.

REHABILITATION

Rehabilitation aims to optimise function and promote independence and self-determination. This is achieved through diverse packages of generally complex interventions delivered by a wide range of healthcare professionals e.g. physiotherapists, occupational therapists, and speech and language therapists. In evaluating such complex interventions it can be difficult to identify the 'active ingredient'. Research is ongoing to unpack the elements of effective rehabilitation and to establish an evidence base for its components.

NHS Evidence recently summarised the high quality evidence on stroke rehabilitation (www.library.nhs.uk/stroke/). A systematic review of the evidence on rehabilitation for mobility, found little empirical support for traditional physiotherapy approaches e.g. Bobath, whereas methods such as treadmill training have more evidence to support their use.[10]

Table 1

Quality and Outcomes Framework (2009/10): Stroke and transient ischaemic attack (TIA) indicators

Records
Stroke 1 The practice can produce a register of patients with stroke or TIA **2 points**
Stroke 13 The percentage of new patients with a stroke or TIA who have been referred for further investigation **2 points**
Ongoing management
Stroke 5 The percentage of patients with TIA or stroke who have a record of blood pessure in the notes in the preceding 15 months **2 points**
Stroke 6 The percentage of patients with a history of TIA or stroke in whom the last blood pressure reading (measured in the previous 15 months) is 150/90 or less **5 points**
Stroke 7 The percentage of patients with TIA or stroke who have a record of total cholesterol in the last 15 months **2 points**
Stroke 8 The precentage of patients with TIA or stroke whose last measured total cholesterol (measured in the previous 15 months) is 5 mmol/l or less **5 points**
Stroke 12 The percentage of patients with a stroke shown to be non-haemorrhagic, or a history of TIA, who have a record that an antiplatelet agent (aspirin, clopidogrel, dipyridamole or a combination), or an anticoagulant is being taken (unless a contraindication or side effects are recorded) **4 points**
Stroke 10 The percentage of patients with TIA or stroke who have had influenza immunisation in the preceding 1 September to 31 March **2 points**

Key elements of a rehabilitation service

The National Stroke Strategy identifies a comprehensive multidisciplinary team with the skills to manage the range of potential problems after stroke (e.g. swallowing difficulties, communication problems, mobility) as central to rehabilitation.

Multidisciplinary rehabilitation requires good interprofessional communication and well defined common goals.

Other important aspects of rehabilitation are involvement and education of the patient and family.[11] It has been noted that much rehabilitation is orientated toward physical function whereas returning to their social roles is actually more important to patients. Rehabilitation starts on admission to hospital and may continue for weeks/months after discharge, depending on patients' individual needs.

The process of rehabilitation is an iterative cycle of assessment (using valid reliable tools), goal setting and evidence-based intervention.[11] In Scotland, the adult rehabilitation strategy[12] recognises that rehabilitation is a process that continues from the acute phase of stroke care through to the long-term self-management phase where the patient takes control of their own recovery using community resources. A potential method of ongoing self-management after stroke is through exercise in the community.

ROLE OF EXERCISE

While the emphasis of rehabilitation is on targeted therapy interventions to improve function and finding compensatory strategies to increase independence – the goal of community exercise is to improve general physical fitness and activity levels.

Physical fitness

Physical fitness is reduced in people who have had a stroke.[13] Stroke survivors are also far more inactive than unaffected community-dwelling older adults.[14,15] Physical inactivity is a risk factor for first-ever stroke;[16] and it is plausible that reduced physical activity

after stroke is a risk factor for recurrent stroke and other vascular events. The marked loss of physical fitness evident in stroke survivors can be at least partly reversed by physical fitness training, and fitness training leads to improvements in physical function.[17] The recently updated Cochrane review found that physical fitness training produced significant improvements in walking speed and endurance in ambulatory stroke survivors.[18]

National clinical guidelines for stroke, published by the RCP, support the provision of exercise as part of usual care for stroke, stating that after stroke all patients should participate in aerobic training.[19] The National Stroke Strategy also makes it clear that this should be a long-term approach, as: 'support to regain well-being – requires…continuing support from a wide range of community-based services, such as exercise classes'.[20]

The STARTER trial found that benefits from fitness training were lost after the training ceased[17] so it is important that changes in physical activity levels and exercise participation are maintained through long-term lifestyle modification.

Mead and colleagues were instrumental in developing the first accredited specialist instructor course for exercise after stroke, see box 1, above.

To date there has only been one study that has examined outcomes in an existing community exercise programme for stroke (i.e. not a research intervention). Stuart and colleagues' [21] controlled study found that at 6 months' follow-up, the intervention group improved whereas controls showed a decline in function with respect to: walking speed, balance, physical function, and social participation.

Psychosocial benefits

In addition to improving physical fitness, there are other potential benefits to attending specialist exercise groups. Qualitative studies, including our own study of stroke survivors attending a fitness training programme,[22] have found that participants report improvements in self-confidence and social integration from group exercise.[23]

The classes available are for ambulatory stroke survivors. At present, there are no evidence-based interventions for stroke survivors with high levels of functional impairment and this is an area for further research. Currently, the only evidence-based methods of secondary prevention are pharmacological.

Box 1

Exercise after stroke: special instructor training course

The course run by Queen Margaret University, Edinburgh comprises 50 hours of teaching delivered by a multidisciplinary team through formal lectures, tutorials and practical sessions. Participants complete an additional 150 hours of directed and self-directed learning. The course is accredited by QMU and endorsed by Skills Active for the Register for Exercise Professionals (REPS). For further details go to: www.qmu.ac.uk/exercise_after_stroke/default.htm . During 2010, it will be rolled out across the UK through Later Life Training (www.laterlifetraining.co.uk)

SECONDARY PREVENTION

Pharmacological therapies play a major role in secondary prevention of stroke and other vascular events, and must be started as soon as possible after the initial event[24] in order to reduce the risk of early recurrence.

Secondary prevention interventions have been extensively reviewed in several national guidelines, e.g. SIGN 108.[25] Most patients who have had an ischaemic stroke, will be prescribed antiplatelet drugs, statins and antihypertensives. Those in atrial fibrillation will be considered for anticoagulation. Patients with carotid territory events who have severe ipsilateral carotid stenosis will be offered early carotid endarterectomy.

The combination of aspirin and dipyridamole slow release is recommended as the optimum antiplatelet regimen. For patients who develop headaches with dipyridamole, dose titration may help. For those who cannot tolerate the combination of aspirin and dipyridamole, clopidogrel monotherapy is an alternative. Generally, the combination of aspirin and clopidogrel is not recommended.

Statins reduce the risk of recurrent vascular events and ischaemic stroke, and should be prescribed irrespective of the absolute cholesterol level. Blood pressure lowering should be considered in all patients, using a combination of an ACE inhibitor and thiazide diuretic. However, if BP is not sufficiently controlled on this regimen, other antihypertensives can be added in.

Warfarin for patients in atrial fibrillation should be considered, including those >75 years, with a target INR of 2.0 to 3.0. A recent meta-analysis found that warfarin reduced the relative risk of stroke by 64% (95% CI: 49-74%) compared with placebo.[26] There has been some concern that warfarin increases the risk of falling in the elderly but recent meta-analyses have concluded that this should not preclude the use of warfarin in this population.[27] Generally, warfarin can be started immediately after a TIA, whereas after ischaemic stroke, warfarinisation may be deferred for two weeks because of concerns about haemorrhagic transformation of infarct.

For patients with haemorrhagic stroke, blood pressure control is important using a combination of a thiazide diuretic and ACE inhibitor. Generally, antiplatelet agents should be avoided unless the patient has co-existing coronary artery disease or other vascular disease, when the risks and benefits of antiplatelet agents need to be weighed up carefully.

QUALITY OF LIFE

For ambulatory stroke survivors, GPs can help improve quality of life and independence by encouraging access to specialist exercise classes for stroke where these exist. In the absence of specialist classes, or where patients are unwilling to attend, GPs can explore other ways of increasing physical activity.

In addition to exercise, GPs should discuss other lifestyle factors. The RCP guidelines recommend that stroke patients should be given advice on: stopping smoking, diet and achieving satisfactory weight, reducing intake of salt and avoiding excess alcohol.

Reducing the risk of recurrent vascular events will be achieved through pharmacological interventions. It is essential to consider compliance with prescribed medication and how to optimise this. National guidance advises that patients should be given written information about what their medication is for and how to take it.

LONG-TERM PROBLEMS

There is increasing recognition that stroke is a chronic disease and that stroke survivors may have a number of different problems. Patients may be left with residual neurological deficits including hemiparesis, hemisensory loss, dysphasia (receptive and/or expressive), dysarthria, dyspraxia, inattention and dysphagia. »

key points

SELECTED BY
Dr Peter Saul
GP, Wrexham and associate GP Dean for North Wales

At one year, a third of patients who have had a stroke have died, and of the survivors, 37% are dependent. Outcome after stroke is highly variable. In the acute phase of ischaemic stroke, patients should receive thrombolysis (within 4.5 hours of stroke onset), aspirin (within 48 hours of onset), and early access to a stroke unit. Care in a stroke unit significantly reduces the risk of death or dependency irrespective of stroke severity.

A comprehensive multidisciplinary team with the skills to manage the range of potential problems after stroke (e.g. swallowing difficulties, communication problems, mobility) is central to rehabilitation. Much rehabilitation is orientated toward physical function whereas returning to their social roles is more important to patients.

While the emphasis of rehabilitation is on targeted therapy interventions to improve function and finding compensatory strategies to increase independence – the goal of community exercise is to improve general physical fitness and activity levels. The marked loss of physical fitness evident in stroke survivors can be at least partly reversed by physical fitness training, and leads to improvements in physical function. Group exercise also improves self-confidence and social integration.

Pharmacological therapies play a major role in secondary prevention, and must be started as soon as possible after the initial event to reduce the risk of early recurrence. Most patients who have had an ischaemic stroke will be prescribed antiplatelet drugs, statins and antihypertensives. Those in atrial fibrillation will be considered for anticoagulation. Patients with carotid territory events who have severe ipsilateral carotid stenosis will be offered early carotid endarterectomy. The combination of aspirin and dipyridamole slow release is recommended as the optimum antiplatelet regimen. Statins reduce the risk of recurrent vascular events and ischaemic stroke, and should be prescribed irrespective of the absolute cholesterol level.

For patients with haemorrhagic stroke, blood pressure control is important. Generally, antiplatelet agents should be avoided unless the patient has co-existing coronary artery disease or other vascular disease, when the risk and benefits of antiplatelet agents need to be weighed up.

In addition to exercise, GPs should give advice on stopping smoking, diet, weight, reducing salt intake and avoiding excess alcohol. Stroke patients may be left with residual neurological impairments (e.g. hemiparesis, sensory loss, dysphasia, dysphagia). Following stroke patients may develop other problems, e.g. incontinence, pain, falls, fatigue, cognitive impairment, and psychological problems such as depression and anxiety. Addressing these issues will improve quality of life and independence.

Box 2

Examples of common problems following stroke

- contractures
- incontinence
- pressure sores
- depression
- anxiety
- emotionalism
- fatigue
- pain
- cognitive impairment and dementia
- infections (e.g. urinary and chest)
- seizures
- falls
- osteoporosis and fractures

Patients may develop other problems following stroke, including psychological problems such as depression and anxiety (see box 2, above). It is important to recognise that these problems are common and can adversely affect quality of life, and so should be treated wherever possible. Addressing these issues, where they exist will improve quality of life and independence.

Finally, it must not be forgotten that relatives care for many stroke survivors; these unpaid carers also need appropriate support.

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STARS
An e-learning resource for health and social care staff based on the Stroke Core Competencies published by NHS Education for Scotland in 2005
www.strokecorecompetencies.org

The Stroke Association
www.stroke.org.uk