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The latest National clinical guideline for stroke

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The Intercollegiate Stroke Working Party (ICSWP) published the 5th edition of the *National clinical guideline for stroke* in October 2016.[1] It provides the most up to date and comprehensive overview of the management of stroke available, covering the whole of the pathway from acute care to longer-term management. It is available for free to download either as a pdf or an ebook (at **www.strokeaudit.org.uk**) and is accompanied by concise guides for different professions, as well as a patient and carer version compiled with the expert help of the patient members of the ICSWP.

Acute care

Stroke units

The mainstay of treatment for acute stroke remains high-quality stroke unit care. Applicable to virtually all patients, this single intervention is responsible for saving lives and reducing disability more than any other stroke treatment. The guideline has recommended this since the first edition in 2000 and although we are performing much better in the UK, it is concerning that only about 60% of patients are admitted to a stroke unit within 4 hours of hospital arrival.

Thrombectomy

The highest profile research to emerge since the last edition is that showing clot retrieval from the proximal middle cerebral artery is safe and highly effective for a proportion of ischaemic stroke patients. An individual patient meta-analysis[2] showed that the number needed to treat for a very good outcome is between 3.2 and 7.4. The guideline recommends the combination of intravenous thrombolysis (unless contraindicated) with clot retrieval for patients with large vessel occlusion where the procedure can start within 5 hours of onset. The challenge for all health services will be to set up services capable of delivering interventional neuroradiology across the country and around the clock. Estimates suggest that in England there may be at least 8,000 suitable patients a year, which if treated with results comparable to the trials would yield about 1,500 additional patients each year living without disability.

Intravenous thrombolysis

The ENCHANTED[3] (Enhanced Control of Hypertension and Thrombolysis Stroke Study) trial was designed to test whether lower dose alteplase (0.6 mg/kg) improved safety without compromising efficacy; it showed lower risk of intracerebral haemorrhage but without clearly showing equivalent effectiveness. The guideline, therefore, remains unchanged. There remains much work to do to reduce door-to-needle times.

Management of blood pressure after intracerebral haemorrhage

Two trials (INTERACT-2 and ATACH-2)[4,5] tested whether acute blood pressure lowering improves outcomes, with apparently conflicting results. The ICSWP concluded that patients within 6 hours of onset of intracerebral haemorrhage with a systolic blood pressure above 150 mmHg should have their blood pressure lowered to 140 mmHg for at least 7 days.

Brain imaging

The 2012 guideline recommended brain scanning within an hour of arrival for selected patients and within 12 hours for the remainder. The ICSWP concluded that for all cases of suspected acute stroke there was now no justification for delaying scanning beyond 1 hour of admission. Management differs between haemorrhage and ischaemia; the only way of differentiating is through imaging, and thrombectomy warrants urgent computerised tomography angiography in selected patients with large artery occlusion.

Staffing levels

There is strong evidence from the Sentinel Stroke National Audit Programme (SSNAP **www.strokeaudit.org/**) database that higher nursing levels on a hyperacute stroke unit (HASU) result in lower mortality after stroke.[6] The evidence for other professions is not so robust but the ICSWP felt that it was important to make recommendations to support service development, as shown in Table 1.

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Table 1. Recommended staffing levels for acute and hyperacute stroke units

	PT WTE/5 bed	OT WTE/5 bed	SLT WTE/5 bed	Psy WTE/5 beds	Dietn WTE/5 bed	Nurse WTE/1 bed	Consultant physician
HASU	0.73	0.68	0.34	0.2	0.15	2.9	24/7, min 6 rota
ASU	0.84	0.81	0.40	0.2	0.15	1.35	5 days ward rounds

ASU = acute stroke unit; Dietn = dietician; HASU = hyperacute stroke unit; OT = occupational therapy; Psy = psychologist; PT = physiotherapy; SLT = speech and language therapy; WTE = whole-time equivalent

Rehabilitation

Early mobilisation

Conventional wisdom was that getting stroke patients out of bed within 24 hours was beneficial. AVERT (A Very Early Rehabilitation Trial)[7] has shown how rehabilitation research is essential and every traditional belief needs to be tested. The trial showed that early intensive rehabilitation may be harmful. The recommendations now state that mobilisation within 24 hours of onset should only be for patients who require little or no assistance to mobilise. Others should begin short, frequent, mobilisations between 24 and 48 hours.

Other aspects of rehabilitation

There has been a huge growth in rehabilitation research but still lots of unanswered questions remain, particularly in areas such as cognition, mood disturbance, communication, fatigue, sex and life after stroke. All of these are common problems after stroke and urgently need high-quality research studies, preferably in time for the 6th edition of the guideline in 2020!

Secondary prevention

Transient ischaemic attack

Previous editions have recommended that patients with suspected transient ischaemic attack (TIA) are risk assessed using the ABCD2 score (age≥60 years, BP≥140/90 mmHg, clinical features of TIA, duration of symptoms, history of diabetes), with high-risk patients being managed within 24 hours and low-risk within a week. There is no justification for rationing resources for a condition where there are no 'zero-risk' patients. The ABCD2 score has often been misused as a diagnostic tool rather than a risk assessment and may have contributed to the situation where less than 20% of referred patients have cerebrovascular disease. The updated recommendation is that all patients within a week of symptoms should be diagnosed and managed by a specialist physician within 24 hours of referral.

Blood pressure management

Intensive therapy targeting systolic blood pressure <120 mmHg reduces major cardiovascular events although with increased adverse events.[8] In support of intensive targets, a large meta-analysis reported benefits proportional to the magnitude of blood pressure reduction with no lesser benefits for those with baseline systolic <130 mmHg.[9] The guideline recommends treatment to a systolic blood pressure below 130 mmHg, except for people with severe bilateral carotid artery stenosis.

Diagnosing atrial fibrillation

Over 20% of strokes occur in relation to atrial fibrillation (AF) and, for the great majority of these patients, secondary stroke prevention should be with anticoagulation. A single admission electrocardiogram will detect AF in 7.7% of patients with no prior history, ambulatory Holter monitoring a further 10.7% and implantable loop recording a further 16.9%. Where there is suspicion that the stroke may be due to a cardio-embolic source, the guideline recommends cardiac monitoring for at least 24 hours.

Conclusions

The 2016 *National clinical guideline for stroke* covers most aspects of stroke care but these are only guidelines. They need to be interpreted and used wisely by clinical specialists for each individual patient. This latest edition, with its accompanying patient and carer version, should be the basis for evidence-based and up-to-date practice and an informed discussion between the person with stroke and their treating multidisciplinary team. ■

Conflicts of interest

The authors have no conflicts of interest to declare.

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