6. Priority diseases and reasons for inclusion

6.6 Acute stroke

See Background Paper 6.6 (BP6_6Stroke.pdf)

Background

A stroke is caused by either a sudden reduction in the blood supply to the brain or by a haemorrhage. An acute stroke refers to the first 24-hour-period of a stroke event. Most strokes (87%) are ischaemic (caused by thrombosis or embolisms) and the rest (13%) are haemorrhagic (caused mainly by rupture of blood vessel or aneurysm).\(^1\) Eight to twelve per cent of ischaemic strokes and 37% to 38% of haemorrhagic strokes result in death within 30 days.\(^2,3,4\) Within the European Union, hospital discharges for cerebrovascular diseases almost doubled during the last 15 years of the twentieth century. It is projected that in the coming years the major increase in the global stroke burden will be in low- and middle-income countries.

Stroke is the second leading cause of disability in Europe after ischaemic heart disease (IHD) and is the sixth leading cause worldwide (See Background Paper 6.6, Table 6.6.7). Women have a higher lifetime risk of stroke than men: about one in five women (20% to 21%) and one in six men (14% to 17%) will suffer a stroke in their lifetime, according to a 2006 study.\(^5,6\) The prevalence of stroke events is expected to increase across the globe as the global population aged over 65 increases.\(^7,8\) The number of stroke events in Europe is projected to rise from 1.1 million in 2000 to 1.5 million per year by 2025, largely due to the ageing population.\(^9\) In the EU27 countries, the annual economic cost of stroke is an estimated €27 billion: €18.5 billion (68.5%) for direct costs and €8.5 billion (31.5%) for indirect costs. An additional €11.1 billion is calculated for the value of informal care.\(^10\)
The successful management of acute stroke is based on imaging such as magnetic resonance imaging (MRI) and computerized tomography (CT) followed by two main strategies: vascular recanalization and supportive care. The restoration or improvement of perfusion to the ischaemic area is a key therapeutic strategy. Secondary prevention strategies that reduce the rate of ischaemic stroke reoccurrence include aspirin and dipyridamole. Current stroke therapy is mainly based on general care and rehabilitation. The main modifiable risk factors for stroke prevention are high blood pressure, diabetes, smoking, and heavy alcohol use.

**Developments since 2004**

Since 2004, there has been little progress in the R&D of medicines for treating acute stroke (particularly in the field of neuroprotection) and surprisingly low levels of funding for this – only 10% of the investments in medicines R&D for IHD or cancer over the past 30 years.

Several large-scale, EU-funded projects established under the EC Seventh Framework Programme (FP7) are currently under way, and will provide further insight into the future of stroke care.
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Remaining challenges

Despite improvements in care, the sequelae of stroke remain a major problem. While 50% to 70% of those who survive an ischaemic stroke will recover functional independence within three months of onset, 20% will require institutional care. The economic impact of stroke care goes beyond the costs of sophisticated acute care, and includes costly secondary prevention (carotid endarterectomy) and the high cost of prolonged high-dependency institutional chronic care and rehabilitation. Neither mortality rates nor hospital discharge rates accurately reflect the level of disability among stroke survivors, which is mainly borne by patients and their families.16

Major improvements are needed in the chain of care for identification of stroke by relatives (education); early treatment (possibly with aspirin); the prompt referral to an accident and emergency facility (mobile units); accurate diagnosis and fast appropriate treatment (protocols and specialized units); improved access to expanded and more efficacious therapeutic options; and prompt referral to rehabilitation services.

Meanwhile stroke research remains severely underfunded, despite its high burden both in Europe and worldwide.

Research needs

Priority research topics

- A breakthrough therapy has yet to be approved and there are still no highly effective acute therapies available. Research for more efficacious therapeutic options to prevent stroke sequelae are crucially needed. This includes the use of stem cells, and the search for new neuroprotective agents. Promising research is being done in the areas of hypothermia (therapeutic cooling), stem cell therapies, and a polypill for secondary prevention of stroke.
- More clinical trials that focus on the elderly and patients with comorbidities are needed.
- Due to lack of advancement in pharmaceutical treatments for acute stroke, there should be an emphasis on prevention and improving health approaches such as specialized stroke units.

References


