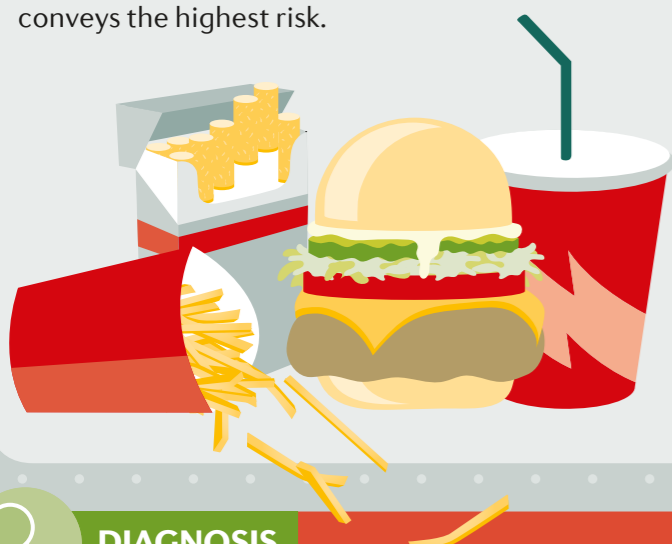


➔ Ischaemic stroke is responsible for 71% of strokes worldwide, and is caused when there is an interruption to brain blood flow. Most ischaemic strokes are thromboembolic in origin.

EPIDEMIOLOGY

The global incidence of ischaemic stroke was 9.5 million cases in 2016, with 2.7 million deaths reported in 2017. Risk factors include older age, male sex and modifiable risk factors such as hypertension, low levels of physical activity, unhealthy diet, high cholesterol, smoking and diabetes mellitus. Of these factors, hypertension conveys the highest risk.



DIAGNOSIS

Symptoms of ischaemic stroke can include the sudden onset of unilateral facial droop, limb weakness or numbness, aphasia (difficulty speaking) or hemispatial inattention. Diagnosis involves clinical assessment and CT or MRI of the brain and vasculature to identify the cause and differentiate ischaemic stroke from other diseases, such as intracerebral haemorrhage, migraine or seizures. Imaging also identifies patients with salvageable brain tissue who benefit from reperfusion therapies despite delayed presentation or unknown onset.

MECHANISMS

Most ischaemic strokes occur owing to the presence of an embolus in the cerebral vasculature

EMBOLUS

Other causes of ischaemic stroke include cerebral small vessel disease, which can result in narrowing of the small vessels of the brain

These emboli can originate from peripheral thrombi that form on atherosclerotic lesions or at sites of arterial dissection, or in people with atrial fibrillation or patent foramen ovale

PREVENTION

Population-wide interventions that affect the modifiable risk factors of stroke, such as tobacco taxes and policies to promote healthy diet and exercise, may help to reduce the incidence of stroke. Individuals

at high-risk of stroke, such as those with cardiovascular risk factors, should undergo screening to assess their likelihood of a cardiovascular event within the next 5 years;

those at a high risk (>15%) should prompt treatment of stroke risk factors, including the use of anti-hypertensive and cholesterol-lowering medications, and dietary and lifestyle advice.

Rx MANAGEMENT

Care in a specialist stroke unit reduces disability. Reperfusion therapies for ischaemic stroke include intravenous thrombolysis (to dissolve the clot) and endovascular thrombectomy (to surgically remove the clot). Intravenous thrombolysis can be administered up to 4.5 hours after stroke onset, with earlier treatment more effective. However, a clinical benefit exists up to 9 hours after onset in patients with imaging indicating salvageable brain tissue. Endovascular thrombectomy in patients with occlusion of a large cerebral vessel reduces disability within 6 hours of stroke onset either combined with thrombolysis or alone in patients unsuitable for thrombolysis (such as those with high risk of bleeding). Selected patients with imaging evidence of salvageable brain tissue benefit from thrombectomy up to 24 hours after stroke onset.

! Strategies to prevent recurrent stroke include blood pressure lowering and antiplatelet therapies in most patients, and targeted interventions in those with specific stroke aetiologies, such as statins for those with atherosclerosis and anticoagulants for those with atrial fibrillation.

OUTLOOK

Although intravenous thrombolysis is widely available, rates of rapid complete reperfusion are suboptimal. Several strategies are being evaluated to improve reperfusion rates, including alternative thrombolytics. Neuroprotection and treatments to enhance recovery remain under investigation.