Induced hypothermia is a neuroprotective therapy with multiple uses in neurologic emergencies. ICTuS-L (The Intravascular Cooling in the Treatment of Stroke—Longer tPA window study) was a prospective, randomized, multicenter safety and feasibility trial of induced endovascular hypothermia and intravenous tPA in awake patients treated within 6 hours of acute ischemic stroke onset. Patients presenting within 3 hours received intravenous tPA (0.9 mg/kg) and were randomized to undergo 24 hours of endovascular cooling (Celsius Control system, Innercool) to 33°C followed by 12 hours of rewarming versus no cooling. Patients presenting between 3 and 6 hours were randomized 2 times: to IV tPA versus no tPA and induced hypothermia versus normothermia. Serious adverse events were more common in the hypothermia groups. Pneumonia was the most common serious adverse event, but its occurrence did not significantly alter patient outcome (modified Rankin Scale) at 90 days. The rate of any intracerebral hemorrhage (symptomatic and asymptomatic) at 48 hours was similar between both groups. Cooling to 33°C was achieved in 20/28 patients (71.4%). This study demonstrates the safety and feasibility of combining intravenous thrombolysis with endovascular hypothermia in awake acute stroke patients. Further studies are needed to look at patient outcome, efficacy, and whether induced hypothermia can extend the window for use of IV tPA. See p 2265.

Histological Features of Symptomatic Carotid Plaques in Relation to Age and Smoking: The Oxford Plaque Study

Age is an important risk factor for stroke. In patients with severe symptomatic carotid stenosis, increasing age is associated with an increased risk of ipsilateral ischemic stroke. This study reviewed carotid plaque histology from 526 patients in Oxford, UK (the Oxford Plaque Study) undergoing carotid endarterectomy for symptomatic stenosis in relation to patient age, smoking, and other vascular risk factors. Current and recent smokers (quit <6 months) were on average 7 years younger than nonsmokers and ex-smokers (quit >6 months) at the time of carotid endarterectomy. Age at carotid endarterectomy decreased with increasing number of cigarettes smoked per day among smokers. While plaques from smokers had a lower prevalence of intraplaque hemorrhage, other histologic changes were similar between groups. The plaques from patients with increasing age had more calcification and large lipid core but lymphocyte infiltration of the cap and plaque, overall plaque inflammation, and fibrous tissue decreased, such that overall plaque instability was not related to age. The authors conclude that while smoking is associated with a lower age at carotid endarterectomy, this is possibly explained by accelerated atherosclerosis, as the mechanisms of plaque instability are unrelated to smoking. Similarly, plaques were not more unstable with increasing age, suggesting the increased risk of stroke in elderly with symptomatic carotid stenosis is due to other risk factors. See p 2288.
The online version of this article, along with updated information and services, is located on the World Wide Web at:

http://stroke.ahajournals.org/content/41/10/2131