Clinical and angiographic risk factors for stroke and death within 30 days after carotid endarterectomy and stent-protected angioplasty: a subanalysis of the SPACE study.

BACKGROUND: Carotid endarterectomy (CEA) and carotid artery stenting (CAS) are used to prevent ischaemic stroke in patients with stenosis of the internal carotid artery. Better knowledge of risk factors could improve assignment of patients to these procedures and reduce overall risk. We aimed to assess the risk of stroke or death associated with CEA and CAS in patients with different risk factors. METHODS: We analysed data from 1196 patients randomised to CAS or CEA in the Stent-Protected Angioplasty versus Carotid Endarterectomy in Symptomatic Patients (SPACE) trial. The primary outcome event was death or ipsilateral stroke (ischaemic or haemorrhagic) with symptoms that lasted more than 24 h between randomisation and 30 days after therapy. Six predefined variables were assessed as potential risk factors for this outcome: age, sex, type of qualifying event, side of intervention, degree of stenosis, and presence of high-grade contralateral stenosis or occlusion. The SPACE trial is registered at Current Controlled Trials, with the international standard randomised controlled trial number ISRCTN57874028. FINDINGS: Risk of ipsilateral stroke or death increased
significantly with age in the CAS group (p=0.001) but not in the CEA group (p=0.534). Classification and regression tree analysis showed that the age that gave the greatest separation between high-risk and low-risk populations who had CAS was 68 years: the rate of primary outcome events was 2.7% (8/293) in patients who were 68 years old or younger and 10.8% (34/314) in older patients. Other variables did not differ between the CEA and CAS groups. INTERPRETATION: Of the predefined covariates, only age was significantly associated with the risk of stroke and death. The lower risk after CAS versus CEA in patients up to 68 years of age was not detectable in older patients. This finding should be interpreted with caution because of the drawbacks of post-hoc analyses.