Asymptomatic carotid occlusion

It is clear that carotid artery occlusion is not a stable condition, and patients should benefit from measures aimed at the prevention of subsequent major cardiovascular as well as cerebrovascular events [1].

Thirty never-symptomatic and 81 symptomatic patients with carotid artery occlusion underwent baseline assessment of 15 risk factors together with PET measurements of oxygen extraction fraction (OEF). Every 6-month telephone contact recorded interval medical treatment and subsequent stroke occurrence during an average follow-up of 32 months. Patients, treating physicians, and an end point adjudicator were blinded to PET results.

Ischemic stroke occurred in 1 of 30 of never-symptomatic patients (3.3%) and 15 of 81 of symptomatic patients (18.5%; $p = 0.03$). No strokes in the carotid territory distal to the occluded vessel occurred in the never-symptomatic patients. Multivariate analysis of baseline risk factors for all 111 patients revealed that age, plasma fibrinogen level, and PET findings of high OEF distal to the occluded carotid artery were the only independent predictors of subsequent stroke ($p < 0.05$). Previous ipsilateral hemispheric or retinal symptoms was not a significant predictive variable. The lower risk of stroke in never-symptomatic patients was associated with a lower incidence of high OEF (4 of 30) as opposed to symptomatic patients (39 of 81; $p = 0.002$), but there was no significant difference in age or fibrinogen level.

Never-symptomatic carotid occlusion carries a very low risk of subsequent ischemic stroke. This benign prognosis is associated with a low incidence of cerebral hemodynamic compromise in these patients. These data support further the importance of hemodynamic factors in the pathogenesis of ischemic stroke in patients with carotid occlusion [2].

Stage II cerebral hemodynamic failure (increased oxygen extraction measured by positron emission tomography [PET]) distal to symptomatic carotid artery occlusion is an independent risk factor for subsequent stroke in medically treated patients.

From 419 subjects referred, 81 with previous stroke or transient ischemic attack in the territory of an occluded carotid artery were enrolled. All were followed up to completion of the study, with average follow-up of 31.5 months.

Telephone contact every 6 months recorded the subsequent occurrence of all stroke, ipsilateral ischemic stroke, and death.

Stroke occurred in 12 of 39 patients with stage II hemodynamic failure and in 3 of 42 patients without ($P = .005$); stroke was ipsilateral in 11 of 39 patients with stage II hemodynamic failure and in 2 of 42 patients without ($P = .004$). Six deaths occurred in each group ($P = .94$). The age-adjusted relative risk conferred by stage II hemodynamic failure was 6.0 (95% confidence interval [CI], 1.7-21.6) for all stroke and 7.3 (95% CI, 1.6-33.4) for ipsilateral stroke.

Stage II hemodynamic failure defines a subgroup of patients with symptomatic carotid occlusion who are at high risk for subsequent stroke when treated medically. A randomized trial evaluating surgical

revascularization in this high-risk subgroup is warranted [3].

1)
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2)
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3)
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