Effects of Intensive Medical Therapy on Microemboli and Cardiovascular Risk in Asymptomatic Carotid Stenosis


Conclusion: Less than 5% of patients with asymptomatic carotid stenosis will benefit from revascularization. Patients with asymptomatic carotid stenosis should receive intensive medical therapy and only be considered for revascularization if microemboli are demonstrated by transtemporal Doppler (TCD) imaging.

Summary: The principle cardiovascular event in patients with asymptomatic carotid stenosis is myocardial infarction rather than stroke. (Stroke 1994;25:759-65.) Randomized trials have demonstrated a reduction in late stroke with carotid endarterectomy for asymptomatic high-grade carotid stenosis, with a high number needed to treat to prevent one stroke. In addition, the benefit of surgery in these trials occurred in an era of less intense medical therapy than what is prevalent now. The authors previously reported that TCD detection of microemboli is useful in identifying patients with asymptomatic carotid stenosis who might be candidates for revascularization. The authors noted, however, that patients with asymptomatic carotid stenosis with detectable microemboli by TCD have become fewer in number in the last few years. They hypothesized that the incidence of microemboli has been reduced through a possible mechanism of stabilization of carotid plaques with more intensive medical therapy.

This study was designed to compare the proportion of asymptomatic carotid stenosis patients with TCD-determined microemboli, cardiovascular events, and carotid plaque progression correlated with baseline medical therapy before and after 2003. The study involved 468 patients collected prospectively with asymptomatic carotid stenosis >60% as determined by duplex scanning. Of the 468 patients, 199 were enrolled between January 1, 2000, and December 31, 2002, and 269 were enrolled between January 1, 2003, and July 2007. Before 2003, microemboli were present in 6.5% and since 2003 were present in only 3.7% (P < .001). Declining numbers of patients with microemboli correlated with better control of plasma lipids and slower progression of carotid plaque area. Before 2003, 17.6% of patients had stroke, death, myocardial infarction, or carotid endarterectomy for symptoms. Since 2003, only 5.6% have had stroke, death, myocardial infarction, or carotid endarterectomy for symptoms. Since 2003 only 5.6% have had stroke, death, myocardial infarction, or carotid endarterectomy for symptoms.