Emergency and early carotid endarterectomy in patients with acute ischemic stroke selected with a predefined protocol. A prospective pilot study

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AIM: The appropriateness of early carotid endarterectomy (CEA) in patients with acute ischemic stroke is still unsettled. The aim of this study was to verify the safety and feasibility of early CEA in a consecutive series of patients with acute ischemic stroke observed in an emergency Department Stroke Unit.

METHODS: During a 24-month study, out of 756 patients with acute ischemic stroke 33 (4.4%) were scheduled for early CEA. Endarterectomy procedures were distinguished according to the time between the onset of stroke and operation as emergency (within 8 hours), early CEA (1-18 days). Patients with impaired consciousness or an infarct larger than 2.5 cm on computed tomographic (CT) or magnetic resonance (MR) scans or both were excluded from surgery. All patients underwent spiral CT, echo-color-Doppler (ECD) sonography, transcranial Doppler (TCD) sonography and, when necessary, MR angiography within 6 hours of admission. No patient underwent conventional angiography. Most patients were operated on under cervical block (CB) anesthesia; general anesthesia (GA) was used only for those with an unstable neurological deficit. Selective shunting was used on the basis of intra-operative transcranial Doppler in patients under GA and the onset or worsening of neurological deficit under CB anesthesia.

RESULTS: Of the 6 patients operated on within a median 6 hours after the onset of stroke, 1 (16.5%) had a fatal hemorrhagic transformation of the infarct, while the remaining 5 (83.5%) stopped fluctuating or progressing and had a favourable neurological outcome. Of the 16 patients operated on within a median 36 hours and of the 11 patients operated on within 7 days, none deteriorated after operation.
CONCLUSION: Emergency CEA is feasible for acute ischemic stroke provided that strict selection criteria are applied and the door-to-surgery interval is kept short (within 8 hours). Early CEA for secondary prevention is feasible and safe, confirming that a delayed operation is in most cases unwarranted. Large randomized trials are warranted before implementing emergent and early CEA in routine clinical practice.

Int Angiol 2003; 22 (4): 426-30