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Researches Classified – Panel Awards - Clinical

Rate of complications due to carotid angioplasty in a tertiary university hospital

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Introduction: Stenoses greater than 50% in the cervical internal carotid artery cause up to 8% of all ischemic strokes. Carotid artery stenting (CAS) is an effective alternative to prevent cerebrovascular events to occur. According to recommendations from the American Heart Association/American Stroke Association, CAS is indicated for symptomatic patients with internal carotid stenosis greater than 70% (measured by non-invasive methods), as long as the risk for periprocedural stroke or death is less than 6%. There is few information about complication rates of CAS in developing countries.

Objectives: The primary goal of this study was to evaluate the frequency of any stroke or death until hospital discharge after CAS in symptomatic patients with carotid stenosis in a tertiary university hospital. Other complication rates were also assessed as secondary aims.

Methods: A single-center retrospective study based on the analysis of charts from patients submitted to CAS between April 2011 and March 2016. Inclusion criteria were: age \geq 18 years old, admission and follow-up by neurologists from the Neurology Ward, performance of CAS according to the hospital's protocol (carotid stenosis \geq 70%, patients with transient ischemic attack (TIA), amaurosis fugax or minor stroke in the last 180 days, and life expectancy greater than a year). Patients not followed by neurologists after CAS were excluded.

Results: A total of 65 patients were included: 3 (4.6%) suffered stroke or death after CAS. Two of these patients presented ischemic strokes and one, an hemorrhagic stroke that lead to death. Myocardial infarctions were not identified, as well as carotid ruptures or dissections, hyperperfusion syndrome, artery perforations, stent thrombosis or encephalopathy. Minor complication rates were: 12.3% for hypotension, 9.2% for bradycardia, 1.5% for TIA, 3.1% for carotid vasospasm and 6.2% for acute kidney injury. The total rate of minor complications was 23.1%, and none of then led to permanent harm.

Conclusions: The rate of stroke or death in a reference tertiary service in a developing country was in line with international recommendations.

Keywords: Angioplasty; Stroke; Ischemic; Myocardial infarctions; Carotid artery stenting; Hospital.