
In Germany, every surgical or endovascular procedure on the extracranial carotid artery is documented in a mandatory quality assurance registry. The purpose of this study is to describe the patient characteristics, the indications for treatment, and the short-term outcomes as well as to analyse the corresponding trends from 2003 to 2014. Data on demographics, peri-procedural measures, and outcomes were extracted from the annual quality reports published by the Federal Agency for Quality Assurance and the Institute for Applied Quality Improvement and Research in Health Care. Data were available from 2003 to 2014 for carotid endarterectomy (CEA) and from 2012 to 2014 for carotid artery stenting (CAS). The primary outcome event of this study is any stroke or death until discharge from hospital. Temporal trends of categorical variables were statistically analysed using the Cochran-Armitage test for trend. Between 2003 and 2014, 309,405 CEAs and 18,047 CAS procedures were documented in the database; 68.1% of all patients were male. The mean age of patients treated with CEA increased from 68.9 years in 2003 to 70.9 years in 2014. The proportion of patients with ASA stages III to V increased from 65% to 71% in CEA, whereas it decreased from 44% to 41% in CAS patients.
53.1% of all CEAs were performed for asymptomatic patients (group A), 34.4% for symptomatic patients treated electively (group B), and 11.2% in a collective group including other indications for CEA or CAS (such as recurrent stenosis, carotid aneurysms, emergency treatment due to stroke-in-evolution). The corresponding data for CAS are 49.3%, 26.1% and 26.3% respectively. In group B, the interval between the neurological index event and CEA decreased from 28 to 8 days \((P=75\% \text{ or occlusion, } P<0.001)\). In patients treated with CAS this rate did not increase (1.7% to 1.8%, \(p=0.909\)). The corresponding rates in CEA and CAS patients with severe contralateral stenosis or occlusion varied between 1.9%-3.1% and 2.2%-2.6%, respectively. In symptomatic patients (group B) with a stenosis of 50 percent or more, the rate of any stroke or death decreased significantly after CEA from 4.2% to 2.4% \((P<0.001)\) and remained stable after CAS (3.9% to 3.5%, \(P=0.577\)). This report on 327,452 carotid procedures analysed one of the largest quality registries on CEA and CAS worldwide. Data indicate that treated patients became older and sicker, whereas in contrast, the in-hospital rates of stroke or death are decreasing over time.