Effect of Single Antiplatelet Therapy vs. Dual Antiplatelet Therapy on Midterm Carotid Restenosis after Endarterectomy

BACKGROUND: Antiplatelet therapy along with carotid endarterectomy (CEA) is a cornerstone in the management of advanced carotid artery stenosis. While perioperative bleeding risk in relation to aspirin and clopidogrel regimens have been examined, there is a paucity of data regarding the effect of dual antiplatelet therapy (DAPT) on midterm restenosis related to intimal hyperplasia. As a result, there is considerable variability in current antiplatelet management after CEA. METHODS: A retrospective review was performed on all patients who underwent CEA from January 1, 2007 to December 31, 2013 at a tertiary referral center. Study groups consisted of subjects who received DAPT with aspirin and clopidogrel, and those who received single antiplatelet therapy (SAPT) with either aspirin or clopidogrel following CEA. Restenosis was determined by a Peak Systolic Velocity > 125 cm/sec on surveillance carotid doppler. Severity and timing of restenosis were compared between study groups. RESULTS: Between January 1, 2007 and December 31, 2013, 1513 patients underwent CEA at this center. Of these, 1453 had sufficient data available for analysis. The SAPT group consisted of 245 patients (175 aspirin only, 70 clopidogrel only) and the DAPT group consisted of 1208 patients (aspirin and clopidogrel). Follow-up arterial duplex demonstrated no significant difference in restenosis rates between the SAPT and DAPT groups at less than 6 weeks (6.5% vs. 11.7% 50-79% stenosis, 0% vs. 2.2% 80-99% stenosis, 2.2% vs. 0.6% occlusion respectively, p=0.3677), and 6 weeks to two years (20.6% vs. 17.9% 50-79% stenosis, 1.1% vs. 1.0% 80-99% stenosis, 1.6% vs. 0.4% occlusion, p=0.2420). Restenosis rates from data greater than two years after surgery demonstrated statistical significance with a higher rate of restenosis in the SAPT (66.4% vs. 82.4% <50% stenosis, 29.9% vs. 16.1% 50-79% stenosis, 0% vs. 0.6% 80-99% stenosis, 1.7% vs. 0.9% complete occlusion respectively, p=0.0038). CONCLUSIONS: The role of antiplatelet therapy following carotid surgery has been accepted for early thromboembolic complications. This review did not demonstrate a statistically significant difference in midterm restenosis when managed with SAPT or DAPT in the first two years following CEA. However, there may be a role for DAPT in reducing late restenosis after CEA, but this requires examination in a prospective randomized trial.