

Dual antiplatelet therapy

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Indications

Adequate dual [antiplatelet therapy](#) is imperative when performing neurovascular [stenting](#) procedures.

After stenting, the patient remains on dual antiplatelet therapy ([ASA](#) + [Plavix](#)) for at least a month and ASA alone indefinitely.

Currently, no consensus for the ideal AP regimen exists.

The most frequent included [acetylsalicylic acid](#) (ASA) 325 mg+[Plavix](#) 75 mg daily (for 7 days prior) and ASA 325 mg+Plavix 75 mg daily (for 5 days prior) for routine placement of intracranial and cervical stents, respectively. For emergency placement, ASA 325 mg+Plavix 600 mg (at time of surgery) was the most frequently used.

Significant heterogeneity in dual antiplatelet regimens following [Pipeline Embolization Device](#) (PED) placement and associated costs, exists at major academic [neurovascular centers](#). The most commonly used first line dual antiplatelet regimen consists of [aspirin](#) and [clopidogrel](#). Two major alternate protocols involving [ticagrelor](#) and [prasugrel](#), are administered to clopidogrel hypo-responders. The optimal dual antiplatelet regimen for patients with cerebrovascular conditions has not been established, given limited prospective data within the neurointerventional literature ¹⁾.

Given its importance, evidence based protocols are imperative. Minimal literature exists focusing on neurovasculature, and therefore understanding current practice patterns represents a first step toward generating these protocols. ²⁾.

[Dual antiplatelet therapy](#) (e.g. [ASA](#) + [Plavix](#)®) are mandatory for 4 weeks (90 days is preferable ³⁾ after placement of a bare metal cardiac stent, and for at least 1 year with drug-eluting stents (DES) (the risk declines from ≈ 6% to ≈ 3%) ⁴⁾. Even short gaps in drug therapy (e.g. to perform

neurosurgical procedures) is associated with significant risk of acute stent occlusion (and therefore elective surgery during this time is discouraged ⁵⁾ DES is so effective in suppressing endothelialization that lifetime dual antiplatelet therapy may be required. Bridging DES patients with antithrombin, anticoagulants, or glycoprotein IIb/IIIa agents has not been proven effective ⁶⁾.

Complications

Dual antiplatelet therapy complications

Case reports

Ravina et al., presented in 2018 a literature review and an illustrative case of an 18-year-old man who presented with progressive headaches and was found to have a large, unruptured basilar apex aneurysm involving the origins of bilateral superior cerebellar artery and posterior cerebral artery. Given the small posterior communicating artery and complexity of the aneurysm, proximal basilar artery occlusion with unilateral superficial temporal artery-to-superior cerebellar artery bypass was recommended. Despite antiplatelet treatment with acetylsalicylic acid pre- and postoperatively, the patient developed acute ischemia of the brainstem and cerebellum as well as an embolic left temporal lobe infarct. The patient received dual antiplatelet therapy starting postoperative day 6 following which he experienced no new infarcts and made a significant neurologic recovery. The current evidence suggests that proximal BA occlusion in complex BA apex aneurysm cases is thrombogenic and can be especially dangerous if thrombosis occurs suddenly in aneurysms without pre-existing intraluminal thrombus. Dual antiplatelet therapy during the first postoperative week presents a possible strategy for reducing the risk of ischemia due to sudden aneurysm thrombosis ⁷⁾.

References

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