Single vs DAPT (Dual Antiplatelet Therapy)

A Brief Overview: Current Clinical Practice

Joshua Daniel, MD - July 7, 2022

Globally, stroke is the second leading cause of death and the third leading cause of disability. One in four people are in danger of stroke in their lifetime.[3] Continued education and analysis of up to date guidelines is essential in clinical practice. This review was created to inform providers, health care professionals and clinical staff of the current practices related to acute high risk TIA and minor ischemic stroke patients.

Each year, approximately 795000 individuals in the united States experience a stroke, of which 87% (690000) are ischemic and 185000 are recurrent.[3] The risk of recurrent TIA or stroke is high but can be mitigated with secondary stroke prevention.[3] Etiology of Ischemic stroke is broken down into five general subtypes; large artery atherosclerosis, cardio embolic disease, small vessel disease, other determined etiology, and undetermined etiology. For the sake of this review, we will focus on the non-cardio embolic subtypes and the current recommendations on the use of anti-platelet therapy.

Standard practice in the management of non-cardio embolic strokes and TIA has always been single antiplatelet or single agent therapy. Typically, clinicians use aspirin or clopidogrel for both short and long term prevention of stroke and TIA after the initial event or diagnosis. Beginning around 2016, several randomized trials and systemic review articles surfaced with topics related to dual antiplatelet therapy and reduced risk of recurrent major ischemic events compared to monotherapy. Since then the American Heart Association and American Stroke Association have updated and modified clinical practice guidelines and recommendations related to secondary stroke prevention.[2]

Patients with high risk transient ischemic attack or minor ischemic stroke are at an increased risk of recurrent stroke and death.[1] For this reason, patients falling into these subgroups have been the focus of research studies in order to change and improve outcomes.

High risk transient ischemic attack is defined as a score of 4 or more on the ABCD2 scale, which estimates the risk of recurrent stroke after TIA. Minor ischemic stoke is defined as a

score of 3 or less on the National Institute of Health Stroke Scale (NIHSS) and no persistent disabling neurologic deficits.[1] Recommendations favor the use of dual anti platelet therapy, specifically aspirin and clopidogrel, in theses two subgroups or diagnoses. Clinical practice guidelines suggest initiating DAPT, aspirin and plavix, within 12-24 hours of symptom onset in patients diagnosed with high risk transient ischemic attack or minor stroke. In this subset of patients it is recommended that DAPT is continued for 10-21 days. Duration of therapy for 10-21 days has been proven to decrease risk of recurrent ischemic stroke and decrease the risk of moderate to major bleeding events. Studies comparing duration of use, 10-21 days vs 22-90 days, concluded that longer treatment duration did not show significant added risk benefit but were linked to risk of hemorrhage with significant risks associated after 90 days.[1] Following the 10-21 days of therapy it is suggested that patients continue a maintenance of single antiplatelet therapy indefinitely, unless otherwise contraindicated.

General recommendations exist to help guide dosing for aspirin and clopidogrel. Few studies have been preformed comparing loading and starting doses for these medications. The general guidelines suggest a loading dose of 300mg followed by 75mg for clopidogrel and dosing between 75-345mg for aspirin.[1] Patient profile, co-morbidities and risk factors may play a part in the dosing of aspirin. Some clinicians feel there is evidence leading toward weight based dosing. Ultimately evaluation of the clinical status of the patient and co-morbidities, risk vs benefit, should be considered when determining treatment plans. Prior to initiating treatment, patients should be informed of risks and benefits of DAPT as well as common and severe side effects associated with antiplatelet medications.

In conclusion, clinical evidence has supported change in clinical practice guidelines for the treatment and prevention of secondary stroke in patients who fit into the non-cardio embolic subtypes of; high risk transit ischemic attack and minor stroke. Dual Antiplatelet therapy is strongly recommended over single agent therapy. Intervention with DAPT, specifically aspirin and clopidogrel, should start 12-24 hours after the initial event or (if unclear or questionable based on history) diagnosis by the treating clinician. Duration of DAPT is suggested for 10-21days with little to no benefit exceeding that time and high risk of bleeding when used for more than 90 days.

References

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