

Single Antiplatelet Therapy

Introduction

Single antiplatelet therapy (SAPT) refers to the use of a single antiplatelet agent, commonly aspirin or a P2Y12 inhibitor, in patients undergoing endovascular treatment of cerebral aneurysms. While dual antiplatelet therapy (DAPT) is the standard for procedures involving stents or flow-diverting devices, SAPT may be an alternative in selected cases to minimize bleeding risks.

Indications for SAPT

SAPT is considered in specific clinical scenarios, including:

Simple Coil Embolization Without Stent Assistance

Traditional coiling procedures without the use of stents or flow-diverting devices do not always require long-term antiplatelet therapy. Some operators administer SAPT (e.g., aspirin 75-100 mg daily) for a short duration to reduce thromboembolic risk. Small Aneurysms with Low Thrombogenicity

In cases where endovascular manipulation is minimal, SAPT may be preferred over DAPT to avoid unnecessary bleeding risks. Patients with High Bleeding Risk

Patients with a history of intracranial hemorrhage, gastrointestinal bleeding, or anticoagulation therapy may benefit from SAPT instead of DAPT. Post-DAPT Maintenance

After completing a period of DAPT (e.g., 3-12 months post-stent placement), patients are often transitioned to SAPT, typically with aspirin, for long-term secondary stroke prevention. Common Agents Used in SAPT Aspirin

Mechanism: Irreversibly inhibits COX-1, preventing thromboxane A2-mediated platelet aggregation. Dosage: 75-325 mg daily (commonly 100 mg daily). Advantages: Well-studied, widely available, and cost-effective. Reduced thromboembolic risk with minimal bleeding compared to DAPT. Limitations: Resistance in some patients (~10-30% non-responders). Limited effectiveness in high-risk cases requiring stronger inhibition. P2Y12 Inhibitors (Clopidogrel, Prasugrel, Ticagrelor)

Used as alternatives to aspirin, especially in aspirin-intolerant patients. Clopidogrel: 75 mg daily (variable response due to CYP2C19 metabolism). Prasugrel: More potent but with higher bleeding risk (not commonly used as monotherapy). Ticagrelor: Direct-acting, fast onset, and consistent response. Efficacy and Safety Considerations Thromboembolic Risk: SAPT provides partial platelet inhibition, which may be insufficient for stent-dependent aneurysm repair. Bleeding Risk: Lower than DAPT, making it preferable in patients with high hemorrhagic risk. Monitoring: Platelet function testing can help assess response, particularly with clopidogrel. Conclusion Single antiplatelet therapy (SAPT) is a viable option in selected cases of cerebral aneurysm treatment, particularly in simple coiling procedures or for patients at high risk of bleeding. Aspirin remains the most commonly used agent, though P2Y12 inhibitors can be alternatives when aspirin is contraindicated. The decision to use SAPT should be individualized, balancing the risk of thrombosis and hemorrhage.

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