Antiplatelet therapy discontinuation

- Emergency management of ceftriaxone-induced Type II Kounis syndrome: A case report
- Dual antiplatelet therapy de-escalation by discontinuation in patients with ST-segment elevation myocardial infarction: a systematic review and meta-analysis
- Effects of Preoperative Low-dose Aspirin on the Incidence of Mesenteric Traction Syndrome in Open Abdominal Aortic Aneurysm Repair: A Retrospective Cohort Study
- One- versus three-month DAPT after everolimus-eluting stent implantation in diabetic patients at high bleeding risk: results from the XIENCE Short DAPT programme
- Perioperative Anticoagulation in Hand Surgery: A Systematic Review
- Dual antiplatelet therapy in GI-bleed patients with extensive coronary artery disease history: a systematic review
- P2Y₁₂ inhibitor or aspirin after percutaneous coronary intervention: individual patient data meta-analysis of randomised clinical trials
- Anterior STEMI After Acute Subdural Hematoma: A Management Dilemma

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Feature	Anticoagulation Discontinuation	Antiplatelet Therapy Discontinuation
Definition	Stopping the use of anticoagulants, which prevent clot formation by inhibiting coagulation factors in the clotting cascade.	Stopping the use of antiplatelet agents, which prevent platelet aggregation and thrombus formation.
Common Drugs	Warfarin, Heparin, LMWH (e.g., Enoxaparin), Direct Oral Anticoagulants (DOACs) (e.g., Apixaban, Rivaroxaban, Dabigatran).	Aspirin, Clopidogrel, Prasugrel, Ticagrelor, Dipyridamole.
Primary Indications	Stroke prevention in atrial fibrillation, venous thromboembolism (VTE) (DVT/PE), mechanical heart valves, hypercoagulable states.	Prevention of arterial thrombosis in coronary artery disease (CAD), stroke, peripheral arterial disease (PAD), post-stent placement.
Mechanism of Action	Inhibits coagulation factors in the clotting cascade, reducing fibrin clot formation.	Inhibits platelet aggregation by targeting platelet activation pathways (COX-1 inhibition, P2Y12 receptor blockade, etc.).
Discontinuation Risks	High risk of thromboembolism (stroke, DVT/PE, mechanical valve thrombosis) if stopped abruptly.	High risk of arterial thrombosis, myocardial infarction (MI), and stent thrombosis (if recently placed).
Bridging Considerations	Often requires bridging (e.g., switching from Warfarin to LMWH before surgery). DOACs usually do not require bridging.	Usually no bridging required unless very high risk (e.g., recent coronary stent or stroke).
Surgical Considerations	Discontinuation timing depends on drug half-life and renal function. Warfarin may need stopping 5 days before surgery, DOACs 24-48 hours.	Discontinuation depends on bleeding risk vs. thrombosis risk. Aspirin is often continued, but P2Y12 inhibitors (e.g., Clopidogrel) may need to be stopped 5-7 days before surgery.
Reversal Agents	Vitamin K (Warfarin), Protamine (Heparin), Idarucizumab (Dabigatran), Andexanet alfa (Apixaban/Rivaroxaban).	No specific reversal agents, but platelet transfusion may be used in emergencies.

Long-Term Discontinuation Considerations	Often requires alternative therapy or monitoring for clot risk.	Stopping therapy inappropriately can lead to major cardiovascular events, especially in patients with recent acute coronary syndrome or stent placement.

Antiplatelet therapy discontinuation is a critical decision that depends on the patient's underlying condition, the type of antiplatelet used, and the risk of thrombotic versus bleeding complications. Here are some key considerations:

1. Indications for Antiplatelet Therapy Secondary prevention of cardiovascular disease (e.g., after myocardial infarction, stroke, or peripheral arterial disease) Prevention of stent thrombosis after percutaneous coronary intervention (PCI) Management of atrial fibrillation in combination with anticoagulants in some cases Post-neurosurgical or neurointerventional procedures where thrombotic risk is significant 2. Risks of Discontinuation Increased risk of thrombosis: Premature discontinuation, especially within 6 months of PCI with a drug-eluting stent, significantly increases the risk of stent thrombosis. Ischemic events: Stopping antiplatelet therapy can lead to myocardial infarction or stroke. Rebound effect: Some agents, like clopidogrel, have a rebound pro-thrombotic effect after sudden discontinuation. 3. When to Consider Discontinuation Before elective surgery: To reduce bleeding risk, but must balance against thrombotic risk. Generally: Aspirin: Often continued unless high bleeding risk (e.g., neurosurgery) Clopidogrel, prasugrel, ticagrelor: Typically stopped 5-7 days before surgery After the recommended duration of dual antiplatelet therapy (DAPT): Post-PCI with drug-eluting stent: At least 6-12 months Post-PCI with bare-metal stent: At least 1 month After ischemic stroke or transient ischemic attack (TIA): Typically 21-90 days for DAPT, then lifelong aspirin or clopidogrel For major bleeding: Discontinuation may be necessary in cases of life-threatening bleeding. 4. Restarting Antiplatelet Therapy After surgery: Typically resumed within 24-48 hours postoperatively if hemostasis is secured. Following major bleeding: Restarting should be considered based on a risk-benefit assessment, often within 7-30 days.

Antiplatelet therapy discontinuation in Endovascular Treatment of Cerebral Aneurysm

- Antiplatelet Therapy in Endovascular Treatment of Cerebral Aneurysms
- Real-world Data of Antithrombotic Therapy in Neuroendovascular Therapy: Analysis of JR-NET 4
- Impact of duration of dual anti-platelet therapy on risk of complications after stent-assisted coiling of unruptured aneurysms
- Discontinuation of antiplatelet therapy after stent-assisted coil embolisation of cerebral aneurysm: a nationwide cohort study
- Antiplatelets and antithrombotics in neurointerventional procedures: Guideline update
- Determinants of intracranial aneurysm retreatment following embolization with a single flow-diverting stent
- A case of subdural hemorrhage due to ruptured cerebral aneurysm presenting with atypical imaging features
- Extracranial-intracranial high-flow bypass as a rescue therapy for incomplete cerebral aneurysm occlusion after flow diversion: A case report

The optimal duration for dual antiplatelet therapy (DAPT) after stent-assisted coiling (SAC) of intracranial aneurysms is unclear.

Narrative Reviews

Thromboembolism is one of the main causes of severe complications in the endovascular treatment of cerebral aneurysms, and antiplatelet therapy (APT) is necessary to prevent such complications. Conversely, prolonged antiplatelet therapy has the potential risk of hemorrhagic complications; therefore, the timing of dose reduction or antiplatelet therapy discontinuation is an important aspect of periprocedural APT. However, no clinical evidence of an optimal regimen of APT for cerebral aneurysms exists, and the selection, dosage, duration, or combination of antiplatelets has been dependent on physicians for unruptured or ruptured cerebral aneurysms. Many reports have shown that preoperative APT can reduce ischemic complications without increasing hemorrhagic complications, and some reports have shown that the P2Y12 reaction units (PRU) value measured using the VerifyNow (Werfen, Barcelona, Spain) system is associated with periprocedural ischemic and hemorrhagic complications. Appropriate dose and duration management adjustments based on the platelet reactivity testing, aneurysm morphology, treatment, and patient background may contribute to good outcomes. Although accumulating evidence exists regarding the efficacy of preoperative APT, there is no evidence regarding the optimal duration or discontinuation of APT [1)]

Matsubara et al. effectively highlight the importance of APT for thromboembolism prevention in neuroendovascular procedures. However, the study lacks specific guidelines on antiplatelet therapy discontinuation, standard PRU cutoffs, and alternative antiplatelet regimens. While the evidence supporting preoperative APT is growing, future research should focus on RCTs that establish optimal treatment durations and risk stratification models to ensure safe and effective therapy.

Retrospective observational studies

Sasaki et al. retrospectively analyzed data on periprocedural antithrombotic therapy in the Japanese Registry of Neuroendovascular Therapy (JR-NET) 4, a nationwide survey carried out in Japan between January 2015 and December 2019. Details on antithrombotic therapy in neuroendovascular therapy for ruptured cerebral aneurysms, unruptured cerebral aneurysms, and percutaneous transluminal angioplasty or stenting were collected from the JR-NET 4 database. These data were analyzed and compared with those from the JR-NET 2 (January 2008 to December 2009) and JR-NET 3 (January 2010 to December 2014). A total of 36,560 cases were analyzed in the JR-NET 4. The frequency of preprocedural dual antiplatelet therapy (DAPT) significantly increased from the JR-NET 2 to 4 (48.1%, 53.4%, and 62.3%, respectively; $P < 0.001$), whereas the frequency of monotherapy significantly decreased (15.7%, 13.9%, and 8%, respectively; $P < 0.001$). Postprocedural antiplatelet therapy exhibited similar trends, and postprocedural anticoagulant therapy was discontinued. Particularly, heparin use significantly decreased from the JR-NET 2 to 4 (23.4% vs. 12.7% vs. 7.9%, respectively; $P < 0.001$). In terms of periprocedural complications, the incidence of ischemic complications increased from the JR-NET 3 to 4 (5.8% vs. 6.2%; $P = 0.05$). In the JR-NET 4, severe adverse events and hemorrhagic and all complications were significantly more frequent in the preprocedural triple or more therapy group.The rate of postprocedural anticoagulant therapy decreased, whereas that of antiplatelet therapy increased. Overall, in Japan, periprocedural DAPT has become increasingly

common [2]

1)
Matsubara H, Egashira Y, Enomoto Y. Antiplatelet Therapy in Endovascular Treatment of Cerebral Aneurysms. J Neuroendovasc Ther. 2025;19(1):2024-0016. doi: 10.5797/jnet.ra.2024-0016. Epub 2024 Jun 22. PMID: 40007974; PMCID: PMC11850991.
2)
Sasaki N, Enomoto Y, Yamagami H, Iihara K, Ishii A, Imamura H, Sakai N, Sakai C, Satow T, Matsumaru Y, Yoshimura S. Real-world Data of Antithrombotic Therapy in Neuroendovascular Therapy: Analysis of JR-NET 4. Neurol Med Chir (Tokyo). 2024 Dec 15;64(12):434-441. doi: 10.2176/jns-nmc.2024-0144. Epub 2024 Oct 22. PMID: 39443122; PMCID: PMC11729255.

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