

Antithrombotic therapy

Antithrombotic therapy and **antiplatelet therapy** are related but not identical.

****Definition****

- **Antithrombotic therapy** refers to all treatments aimed at reducing blood clot formation. It includes:
 - **Anticoagulants** – Prevent clot formation by interfering with the coagulation cascade (e.g., heparin, warfarin, direct oral anticoagulants like apixaban or rivaroxaban).
 - **Antiplatelet agents** – Inhibit platelet aggregation, an early step in clot formation (e.g., aspirin, clopidogrel, ticagrelor).
- **Antiplatelet therapy** is a **subset** of antithrombotic therapy, specifically targeting platelets to prevent them from clumping together.

****Key Differences****

Feature	Antiplatelet Therapy	Anticoagulant Therapy
Target	Platelets (aggregation)	Coagulation cascade (clotting factors)
Main Use	Arterial thrombosis prevention (e.g., stroke, MI)	Venous thromboembolism prevention (e.g., DVT, PE)
Examples	Aspirin, Clopidogrel	Warfarin, Heparin, DOACs (Apixaban, Rivaroxaban)
Risk of Bleeding	Lower than anticoagulants	Higher bleeding risk

Summary: Antiplatelet therapy is a type of antithrombotic therapy, but not all antithrombotic therapies are antiplatelet therapies.

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 ¹⁾

¹⁾

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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