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Approach to Anticoagulation Therapy in Patients with Combined Atrial Fibrillation and Coronary Artery Stents: A Review of the Literature

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**Abstract:**

**Introduction:** Patients with atrial fibrillation (AF) on oral anticoagulant therapy (OAC) may require percutaneous coronary intervention (PCI) with use of dual antiplatelet therapy (DAPT). Combined antithrombotic therapy with OAC plus DAPT puts the patient at increased risk of bleeding while subtherapeutic regimens increase the risk of ischemic events. The optimal antithrombotic regimen for these patients remains challenging. This review explores the literature regarding therapy for patients with overlapping AF and PCI and seeks to define a consensus for optimal anticoagulation management.

**Methods:** A literature search was conducted using PubMed. Papers were included in the review if they investigated different antithrombotic regimens in patients with AF who underwent PCI. 11 different antithrombotic strategies were compared including combinations of vitamin K antagonists (VKA) with DAPT versus direct oral anticoagulants (DOAC) combined with either DAPT or single antiplatelet therapy (SAPT) with the P<sub>2</sub>Y<sub>12</sub> inhibitor clopidogrel alone. The safety outcome was defined as clinically significant bleeding and major adverse cardiac events (MACE). Our search selected four eligible trials that had a cumulative enrollment of 10,026 patients and compared 11 treatment strategies.

**Results:** WOEST, PIONEER, RE-DUAL, and AUGUSTUS were four landmark trials that evaluated antithrombotic therapies in patients with PCI and AF. The combination of VKA with DAPT had a significantly increased amount of bleeding when compared to all other combinations. The combination of a DOAC with SAPT demonstrated the lowest risk of bleeding with no significant increase in MACE.

**Discussion:** Consensus among the landmark trials suggests that triple anticoagulation therapy with OAC plus DAPT increases the bleeding risk without additional ischemic benefit compared with OAC plus SAPT. In other words, triple anticoagulant therapy can be streamlined by dropping aspirin and patients with AF and PCI can be safely managed with DOAC plus a P<sub>2</sub>Y<sub>12</sub> inhibitor alone.

**Keywords:** Percutaneous coronary intervention, dual antiplatelet therapy, atrial fibrillation, direct acting oral anticoagulants, triple therapy