Anticoagulation therapy in patients with atrial fibrillation and transcatheter aortic valve implantation

KEYWORDS: transcatheter aortic valve implantation, atrial fibrillation, oral anticoagulation therapy.

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Background: Patients scheduled for transcatheter aortic valve implantation (TAVI) have advanced age, with estimated more than 30% of patients with an indication for oral anticoagulation therapy due to atrial fibrillation (AF). Dual antiplatelet therapy after TAVI has been historically considered as a standard approach, with current guidelines supporting the use of oral anticoagulation monotherapy with vitamin K antagonists (VKA) in patients requiring stroke protection in atrial fibrillation. Direct oral anticoagulants (DOACs) are being currently investigated as monotherapy in patients with AF after TAVI, with conflicting results among different agents.

Patients and Methods: We analyzed 151 consecutive patients who underwent TAVI procedure in our institution from 2013 to 2021.

Results: There were 67 (44%) patients with AF (paroxysmal AF in 17 (25%) patients) that underwent TAVI procedure. Their median age was 80 years, 24% had diabetes mellitus, 30% had concomitant coronary artery disease, and their median CHA2DS2Vasc score was 5 (high thrombotic risk). Pre-procedural anticoagulation therapy was AVK in 34 (51%), DOACs in 18 (27%), and the remaining 22% of patients were taking ASA or clopidogrel. Early post-procedural anticoagulation therapy was AVK in 44 (67%), DOACs in 7 (12%), with antiplatelet therapy in 14 (21%) of patients. One patient with AF had post-procedural stroke, with no cases of post-procedural stroke among non-AF group. Their in-hospital mortality was 3.4%, in comparison to 2.7% in patients without AF. After 2017, all patients with AF were anticoagulated with AVK or DOAC after TAVI. After 2019, when full percutaneous approach was introduced, 7 patients were managed with single DOAC early after TAVI (5 with apixaban, and 2 with rivaroxaban) and had no peri-procedural ischemic or bleeding complications related to anticoagulation therapy.

Conclusion: Patients with AF scheduled for TAVI have increased bleeding and thrombotic risk and require scrutinized tailoring of anticoagulation and other concomitant therapy. With fast-track transfemoral TAVI and full percutaneous approach, early continuation of a single DOAC in optimal dose adjusted to age, renal function and other comorbidities appears to be safe and effective and needs to be evaluated in a larger cohort of patients.

LITERATURE