What's New in Antithrombotic Therapy?

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The year 2020 will undoubtedly be remembered for the emergence of the COVID-19 pandemic. It is remarkable that while research centres across the world have come together to try to solve the pandemic health crisis, the scientific community has continued to produce reliable evidence to inform practice guidelines for other health science disciplines.

As a clinical pharmacist specialising in cardiovascular disease (CVD), working in a tertiary referral hospital, I have been particularly interested in 2020 randomized clinical trials (RCTs) focusing on the use of antithrombotic medications in:

i. Patients who underwent percutaneous coronary intervention (PCI) after acute coronary syndrome (ACS)

ii. Patients who underwent transcatheter aortic-valve implantation (TAVI).

iii. Patients with atrial fibrillation (AF) and a bioprosthetic mitral valve.

i. Dual antiplatelet therapy (DAPT) with aspirin and one of the more potent antiplatelet agents, clopidrogel, ticagrelor or prasugel, remains the gold standard for antithrombotic treatment after ACS. The antithrombotic benefit of DAPT must be balanced with its bleeding risk and the optimal duration of DAPT therapy needs to be addressed.[1] In ACS patients who underwent PCI and treatment with new generation sirolimus drug-eluting stents, the TICO trial compared ticagrelor used as monotherapy after 3 months of DAPT (aspirin plus ticagrelor) versus 12-months of DAPT (aspirin plus ticagrelor). The primary outcome was net adverse clinical events (death, MI, stent thrombosis, stroke, target vessel revascularization, or Thrombolysis in Myocardial Infarction [TIMI] major bleeding) at 12 months. An adverse clinical event occurred in 3.9% (59/1527) of the patients in the ticagrelor monotherapy after 3 months of DAPT group, compared with 5.9% (89/1529) of the 12-month DAPT group (p = 0.01). Ticagrelor monotherapy after 3 months of DAPT was found to be superior to 12-month of DAPT.[2]

ii. Almost two decades have passed since the first TAVI was performed.[3] TAVI is a treatment indicated for patients with severe aortic stenosis who are not candidates for surgery, or who are at high risk of complications due to surgery. Life-threatening ischaemic or bleeding events can arise after TAVI, making the antithrombotic strategy crucial in these patients. In Cohort A of the POPular TAVI trial, aspirin monotherapy was compared to aspirin plus clopidogrel in patients undergoing TAVI with no indication for long-term oral anticoagulation. The two primary outcomes were: all bleeding and non–procedure-related bleeding over a period of 12 months. A bleeding event occurred in 15.1% (50/331) of the patients in the aspirin monotherapy group compared with 26.6% (89/334) of the aspirin plus clopidogrel group (p = 0.001). Non–procedure-related bleeding occurred in 15.1% (50/331) of the patients in the aspirin monotherapy group and 24.3% (83/334) in the aspirin plus clopidogrel group (p=0.005). Aspirin monotherapy resulted in a reduction in all bleeding and non-procedure-related bleeding compared with aspirin plus clopidogrel.[4]

iii. Patients with AF and a bioprosthetic mitral valve require long term anticoagulation and are usually anticoagulated with warfarin. The RIVER (Rivaroxaban in Patients with Atrial Fibrillation and a Bioprosthetic Mitral Valve) trial aimed to evaluate the safety and effectiveness of rivaroxaban compared to warfarin in patients with AF and a bioprosthetic mitral valve. The primary outcome was a composite of death, major cardiovascular events or major bleeding at 12 months. The mean time to a primary outcome event for rivaroxaban was 347 days and for warfarin 340.1 days respectively (p < 0.0001 for noninferiority, p = 0.1 for superiority). Rivaroxaban was not inferior to warfarin in preventing thromboembolic events in patients with AF with bioprosthetic mitral valve, suggesting rivaroxaban may be an alternative to warfarin in these patients.[5]

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The findings of the TICO, POPular TAVI and RIVER trials are likely to support changes to current and future practice and ensure best evidence pharmacotherapy is applied when treating patients with cardiovascular disease in need of antithrombotic therapy.

References

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