**Introduction**: Limited data exists on the use of direct oral anticoagulants (DOACs) in patients with atrial fibrillation (AF) who undergo bio-prosthetic valve replacement. While warfarin is recommended in patients with valvular AF, data on the safety and efficacy of DOACs in patients with bio-prosthetic valves is limited. The objective of this study is to compare the safety and efficacy of DOAC use as compared to warfarin in patients with bio-prosthetic aortic and mitral valves.

**Methods**: We performed a retrospective study of all patients who underwent mitral or aortic bio-prosthetic valve replacement from January 2014 to June 2018. All patients who developed AF and were initiated on anti-coagulation were recorded. Our primary outcome was any thrombo-embolic event (ischemic stroke, TIA). Secondary outcomes were minor and major bleeding events. Patient records and transesophageal echo reports were manually reviewed for outcomes.

**Result**: There were 73 patients who underwent mitral valve replacement and 219 who underwent aortic valve replacement. A total of 48 patients were initiated on anti-coagulation (22 with mitral bio-prosthetic valve, 23 with aortic bio-prosthetic valve, and 3 combined aortic and mitral bio-prosthetic valves). Mean age of these patients was 72 +_11 years. Females comprised 54% and Caucasians were 56%. Average EF was 52% +_15. Mean CHA2DS2-VASc score was 4+_1.5. Group A consisted of 25 patients initiated on Warfarin and group B comprised of 23 patients on DOAC. There was no difference in baseline characteristics between both groups. Mean follow up time was 26+_5 months. There was no incidence of thromboembolic events in both groups. There was no difference in major and minor bleeding between both groups (12%, n=3/25 in Group A and 13%, n=3/23 in Group B, p=0.62).

**Conclusion**: Anticoagulation therapy with DOACs seems to be an effective and safe treatment strategy for patients with aortic and mitral bio-prosthetic valves and atrial fibrillation with no increased risk of thromboembolic events. Bleeding rates are comparable to patients on warfarin.