

## Clinical outcomes of Japanese atrial fibrillation patients with combined valvular heart disease: the Fushimi AF Registry

K. Doi<sup>1</sup>, K. Ishigami<sup>1</sup>, Y. Aono<sup>1</sup>, S. Ikeda<sup>1</sup>, Y. Hamatani<sup>1</sup>, A. Fujino<sup>1</sup>, Y. An<sup>1</sup>, M. Ishii<sup>1</sup>, M. Iguchi<sup>1</sup>, H. Ogawa<sup>1</sup>, N. Masunaga<sup>1</sup>, H. Wada<sup>2</sup>, K. Hasegawa<sup>2</sup>, M. Abe<sup>1</sup>, M. Akao<sup>1</sup>

<sup>1</sup>Kyoto Medical Center, Department of Cardiology, Kyoto, Japan; <sup>2</sup>Kyoto Medical Center, Division of Translational Research, Kyoto, Japan

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**Background:** We previously reported that valvular heart disease (VHD) was not at the significant risk of stroke/systemic embolism (SE), but was associated with an increased risk of hospitalization for heart failure (HF) in Japanese atrial fibrillation patients. However, the impact of combined VHD on clinical outcomes has been little known.

**Purpose:** The aim of this study is to investigate the prevalence of combined VHD and its clinical characteristics and impact on outcomes such as stroke/SE, all-cause death, cardiac death and hospitalization for HF.

**Method:** The Fushimi AF Registry is a community-based prospective survey of AF patients in one of the wards of our city which is a typical urban district of Japan. We started to enroll patients from March 2011, and follow-up data were available for 4,466 patients by the end of November 2019. In the entire cohort, echocardiography data were available for 3,574 patients. 68 AF patients with prosthetic heart valves were excluded and we compared clinical characteristics and outcomes between 488 single VHD (103 Aortic valve disease (AVD), 315 mitral valve disease (MVD), 70 tricuspid valve disease (TVD)) and 158 combined VHD (46 AVD and MVD, 11 AVD and TVD, 66 MVD and TVD, 35 AVD and MVD and TVD).

**Result:** Compared with single VHD, patients with combined VHD were older (combined vs. single VHD: 78.5 vs. 76.0 years, respectively;  $p < 0.01$ ), more likely to have persistent/permanent type AF (73.4% vs. 63.9%,

$p = 0.02$ ) and prescription of warfarin (63.1% vs. 53.8%,  $p = 0.04$ ). Combined VHD was less likely to have diabetes mellitus (13.9% vs. 23.6%,  $p = 0.01$ ) and dyslipidemia (26.6% vs. 40.4%,  $p < 0.01$ ). Sex, body weight, hypertension, pre-existing HF were comparable between the two groups.

During the median follow-up of 1,474 days, the incidence rate of stroke/SE was not significantly different between the two groups (1.58 vs. 1.89 per 100 person-years, respectively, log rank  $p = 0.10$ ). The incidence rate of all-cause death (7.35 vs. 5.33,  $p = 0.65$ ), cardiac death (1.20 vs. 0.99,  $p = 0.91$ ) and hospitalization for HF (5.55 vs. 4.43,  $p = 0.53$ ) were also not significantly different. We previously reported AVD had significant impacts on cardiac adverse outcomes in AF patients, and we further analyzed event rates between combined VHD including AVD (AVD and MVD/TVD) and without AVD (MVD and TVD). Combined VHD with AVD group had higher incidence rate of all-cause death (10.7 vs. 5.79,  $p = 0.03$ ) than that without AVD group. However, the incidence rate of stroke/SE (1.98 vs. 1.56,  $p = 0.59$ ), cardiac death (0.98 vs. 1.14,  $p = 0.68$ ), hospitalization for HF (8.03 vs. 5.38,  $p = 0.17$ ) were not significantly different between the two groups.

**Conclusion:** As compared with single VHD, the risk of stroke/SE, all-cause death, cardiac death and hospitalization for HF in combined VHD was not significantly different. Among patients with combined VHD, those having AVD had higher incidence rate of all-cause death than those without AVD.

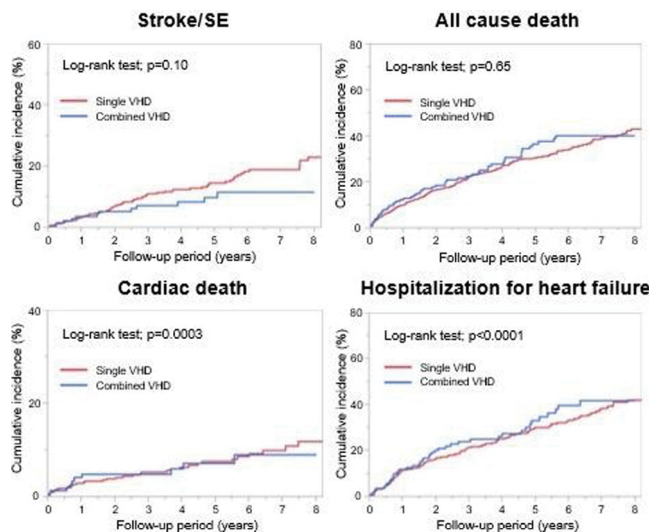


Figure 1