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Impact of Real-world Off-label dose of Apixaban on long-term clinical outcomes in Heart failure patients with Atrial Fibrillation and Chronic Kidney Disease

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Objectives : Apixaban is a key treatment for preventing cardioembolic events in NVAF patients. However, real-world dosing practices based on kidney function vary. This study aims to evaluate the impact of off-label Apixaban dosing on long-term clinical outcomes in heart failure patients with NVAF and chronic kidney disease.
Methods : Our database of HF patients diagnosed with AF and CKD from 2018 to 2024 was used to obtain laboratory, echocardiography, electrocardiogram (ECG), and clinical outcomes data. Inclusion criteria were all HF patients with AF and CKD using Apixaban. And we compared bleeding, systemic thrombotic events including stroke/systemic embolism and death according to off-label real -world dose of Apixaban.
Results : Among 370 HF patients with AF and CKD (78.4±9.7 years), 197 (53.2%) patients took off-label underdosed Apixaban. Difference in the baseline characteristics was not observed among patients including CHA_2DS_2 VASc score and HASBLED score. During the median 18-month follow-up, there was no significant difference of systemic thrombotic events including stroke/systemic embolism and death (P=0.705) in the off-label underdosed Apixaban group vs. those with standard dose or off-label overdosed Apixaban. And, there was also no significant difference of bleeding to off-label real-world dose of Apixaban (off-label underdose vs. standard dose, P=0.600; off-label overdose vs. standard dose, P=0.395; off-label underdose vs. off-label overdose, P=0.469). however, in multivariate analysis, CHA_2DS_2VASc score was independent risk factors for systemic thrombotic events (OR 1.994; CI 1.084-3.669; P=0.027).
Conclusions : There was no significant difference of systemic thrombotic events including stroke/systemic embolism and death with no difference in the risk of bleeding in HF patients with AF and CKD, supporting the apixaban dosing tailored to specific clinical features and drug pharmacokinetics of the Asian patients.