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### Efficacy and safety of oral anticoagulation in nonagenarian patients with atrial fibrillation

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**Introduction:** Embolic prevention with oral anticoagulation is the cornerstone for the management of patients with atrial fibrillation (AF). However, data about the efficacy and safety of oral anticoagulation in nonagenarian patients are limited. We aimed to analyze the impact of oral anticoagulation in mortality, embolic and hemorrhagic events, in patients  $\geq 90$  years with non-valvular AF.

**Methods:** We used data from a multicentric registry of 1,750 consecutive nonagenarian patients diagnosed of AF between 2013 and 2018. A propensity-matched analysis was performed to match the baseline characteristics of patients treated or not with oral anticoagulants, and for those treated with vitamin K antagonists (VKAs) vs direct oral anticoagulants (DOACs). The impact of oral anticoagulation in the embolic and hemorrhagic risk was assessed by a competitive risk analysis, using a Fine and Gray regression model, with death being the competitive event. For embolic risk, we have considered a stroke, pulmonary or peripheral embolism. For bleeding risk, we have considered any bleeding requiring hospital admission.

**Results:** The mean of CHA2DS2-VASC and HASBLED scores was  $4.5 \pm 1.3$  and  $2.8 \pm 1.0$  points, respectively. Most of patients were anticoagulated (70.1%; n=1,256). DOACs were used in 709 patients, and VKAs

in 517 patients. During a median follow-up of 25.2 months (IQR 12.2–44.3 months), 988 patients died (56.5%), 180 presented embolic events (10.3%), 186 had bleeding events (10.6%), and 29 had intracranial hemorrhage (ICH, 1.7%). After propensity-score matching, anticoagulation (versus non anticoagulation) was associated with lower mortality rate (HR 0.73, 95% CI 0.60–0.89; p=0.002), less mortality and embolic events (HR 0.77, 95% CI 0.64–0.92; p=0.005), but more bleeding events (HR 2.05, 95% CI 1.25–3.35; p=0.004). In comparison with VKAs, DOACs showed similar risk of mortality and embolic events (HR 1.14, 95% CI 0.88–1.47; p=0.337), and similar risk of bleeding events (HR 0.75, 95% CI 0.43–1.28; p=0.287), although a trend to lower risk of ICH was found (HR 0.17, 95% CI 0.02–1.39; p=0.097).

**Conclusions:** Among nonagenarian patients with AF, oral anticoagulation was associated with lower all-cause mortality. Although survival free of embolic events was significantly higher in patients with anticoagulation, the risk of major bleeding was twice than in non-anticoagulated patients. There was not differences between VKAs and DOACs in terms of embolic events and total major bleeding. However, compared with VKAs, DOACs were showed a trend to lower risk of ICH.

