Atrial fibrillation burden and timing of anticoagulation therapy in patients with screen-detected and clinically-diagnosed AF

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Purpose: We evaluated the impact of atrial fibrillation (AF) burden and timing of oral anticoagulation (OAC) therapy initiation on stroke risk in patients with screen-detected and clinically-diagnosed AF.

Methods: Consecutive patients aged ≥65 years attending medical outpatient clinics with or without known AF were prospectively enrolled for AF-screening using handheld single-lead ECG (AliveCor) from 12/2014 to 12/2017 (NCT02409654). Repeated screening was performed in patients with >1 visit during this period. Patients who participated in repeat screening were included in final analysis. Patients with previously known AF who were in AF in the initial screening and those with repeat screen-positivity were considered probably persistent AF, otherwise paroxysmal AF (single screen-positivity) or no AF (never screen-positive). Time from AF detection to initiation of OAC (Dx-to-Rx) was divided into two exposure levels, Dx-to-Rx ≤ 1 and >1 month. Ischemic stroke risk was estimated using adjusted sub-distribution hazard ratios (aSHR) derived from Fine and Gray regression models, accounting for death as competing risk, adjusting for components of CHA2DS2VASC score and chronic renal disease, with no AF as reference and stratified according to AF burden and Dx-to-Rx.

Results: Of 11,972 patients enrolled, 3,853(32.2%) received repeated screening (mean age 76.7±7.3, female 47.5%), of which 3.7% (n=144) had screened-detected AF, 25.2% (n=972) previously known AF, 5.9% (n=226) clinically-diagnosed AF during follow-up, and 65.2% (n=2,511) no AF. Persistent AF was identified in 16.7% (n=644/3,853). Of patients with all AF categories, 55.1% (n=739/1,342) initiated OAC within 1 month after AF diagnosis. During a median follow-up period of 7.2(IQR: 6.1-7.5) years, compared to no AF, patients with paroxysmal AF and Dx-to-Rx ≤ 1m (aSHR=1.40, 95%CI:0.80-2.47) had similar low risk of ischemic stroke, while aSHR was highest for persistent AF and Dx-to-Rx >1m (aSHR=2.42, 95%CI:1.38-4.26), followed by persistent AF with Dx-to-Rx≤ 1m (aSHR=2.19,95%CI:1.47-3.28), and paroxysmal AF with Dx-to-Rx >1m (aSHR=2.00,95%CI:1.32-3.02) (Figure). Subgroup analysis revealed the effect of early initiation of OAC (P for interaction=0.936) and higher AF burden (P for interaction=0.863) were consistent across screen-detected and clinically-diagnosed AF.

Conclusion: Among patients with screen-detected AF or clinically-diagnosed AF, lower AF burden and immediate initiation of OAC therapy were associated with reduction in risk of ischemic stroke. Early detection of AF by screening facilitating early OAC prophylaxis might improve clinical outcomes.