Risk of dementia in patients treated with NOAC or warfarin for non-valvular atrial fibrillation

Daehoon Kim
Pil-Sung Yang
Eunsun Jang
Hee Tae Yu
Tae-Hoon Kim
Jae-Sun Uhm
Jung-Hoon Sung
Hui-Nam Pak
Moon-Hyoung Lee
Gregory Lip
Boyoung Joung

**Introduction** : Evidence is accumulating that use of oral anticoagulants (OACs) decreases the risk of dementia in patients with atrial fibrillation (AF), but it is unclear if there is a difference between non-vitamin K antagonist oral anticoagulants (NOACs) and warfarin in protecting against dementia. We aimed to investigate the risk of dementia between AF patients taking either NOAC or warfarin using a nationwide cohort data covering the entire Korean population.

**Methods** : Using the Korean national health insurance service database, we identified 52,888 new OAC users aged ≥60 years with non-valvular AF and no previous diagnosis of dementia between January 1, 2013 and December 31, 2016 (31,211 NOAC users and 21,677 warfarin users). We compared the rates of dementia in 1:1 propensity score-matched NOAC (n=17,558) and warfarin users (n=17,558). Starting from OAC initiation, participants were followed up until the occurrence of dementia, death, switching to other OACs, or December 31, 2016, whichever came earliest.

**Result** : During 42,977 person-years of follow-up, there were 3,289 dementia events. Use of NOAC was associated with significant lower risk of dementia [hazard ratio (HR) 0.80, 95% confidence interval (CI) 0.74-0.86]. The risk reduction was prominent for vascular dementia (HR 0.60, 95% CI 0.52-0.68), whereas there was no significant difference in the risk of Alzheimer dementia (HR 0.97, 95% CI 0.87-1.07). Restricting the analyses to patients with no stroke diagnosis before OAC initiation (primary prevention) showed no significant difference in risks of any types of dementia, but in the subgroup with prior stroke (secondary prevention), NOAC significantly reduced the risk of overall (HR 0.71, 95% CI 0.65-0.79) and vascular dementia (HR 0.53, 95% CI 0.46-0.61).

**Conclusion** : In this propensity-score matched nationwide cohort of non-valvular AF patients, NOAC was associated with reduced risk of dementia, compared with warfarin. This association was pronounced for vascular dementia in patients with prior stroke.