FULL-LENGTH ARTICLE NPub.org/05dm88

Atrial fibrillation, antithrombotic treatment, and cognitive aging

A population-based study

Mozhu Ding, MSc, Laura Fratiglioni, MD, PhD, Kristina Johnell, PhD, et al.

Cite as: *Neurology*® 2018;91:e1732-e1740. doi:10.1212/WNL.0000000000006456

Correspondence
Mozhu Ding
mozhu.ding@ki.se
or Dr. Qiu
chengxuan.qiu@ki.se

Study objective

To determine whether atrial fibrillation (AF) is associated with cognitive decline and dementia in elderly persons.

Summary results

AF is associated with faster cognitive decline and an increased risk of dementia in elderly persons.

What is known and what this paper adds

Past studies that examined possible associations between AF and cognitive dysfunction have reported inconsistent results, possibly due to methodologic variations. This study provides a robust assessment of possible associations in a large population-based cohort.

Participants and setting

This study reviewed data for 2,685 participants (62.9% female; mean baseline age, 73.1 ± 10.5 years) in the Swedish National study on Aging and Care in Kungsholmen (SNAC-K), which has been following ≥60-year-old residents of Kungsholmen, a district in central Stockholm, since baseline assessments conducted between March 2001 and June 2004. These participants were initially dementia-free.

Design, size, and duration

Participants with baseline ages of <78 years underwent follow-up assessment in 2007–2010, and participants with baseline ages of ≥78 years underwent follow-up assessments in 2004–2007, 2007–2010, and 2010–2013. Data were collected through face-to-face interviews, clinical examinations, and laboratory tests. AF was detected with ECG-assisted physician diagnoses and patient registers. Global cognitive function was measured at each assessment with the Mini-Mental State Examination (MMSE), and dementia was diagnosed according to standard criteria.

Main results and the role of chance

This study identified 522 cases of AF at baseline or during follow-up and 399 cases of incident dementia over follow-up.

Table Relationships between AF and the risk of incident dementia in study subpopulations

Population considered	Hazard ratio (95% CI) for dementia in persons with AF vs persons without AF
Men (n = 997)	1.27 (0.84–1.91)
Women (n = 1,688)	1.46 (1.10–2.94)
***APOE* ε4 noncarriers (n = 1,796)**	1.22 (0.90–1.67)
***APOE* ε4 carriers (n = 727)**	1.74 (1.17–2.59)

AF was associated with faster MMSE score decline (β, −0.24; 95% confidence interval [CI], −0.31 to −0.16) and an increased risk of incident dementia (hazard ratio, 1.40; 95% CI, 1.11–1.77).

Bias, confounding, and other reasons for caution

This study could not distinguish AF subtypes. The MMSE may be insensitive to subtle domain-specific cognitive changes. This study cannot rule out the possibility of residual confounding in the analyses.

Generalizability to other populations

The SNAC-K population predominantly consists of highly educated Caucasians from an urban district, and this may limit the generalizability of this study's results to dissimilar populations.

Study funding/potential competing interests

The SNAC-K is funded by Swedish national and local government agencies. Some authors report receiving funding from various Swedish foundations, the Swedish National Graduate School on Ageing and Health, and the Chinese and Swedish governments. Go to Neurology.org/N for full disclosures.

A draft of the short-form article was written by M. Dalefield, a writer with Editage, a division of Cactus Communications. The authors of the full-length article and the journal editors edited and approved the final version.