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Summary

Comparative risk of dementia among patients with atrial fibrillation treated with catheter ablation versus anti-arrhythmic drugs

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American Heart Journal (2022)
PMID: 36245141 DOI: 10.1016/j.ahj.2022.09.007

BACKGROUND

Dementia is a neurological disease with considerable morbidity and mortality burden, and is expected to affect 10.5 million Americans by 2050. Atrial fibrillation (AF), the most common arrhythmia in adults, increases the risk of dementia. Evidence suggests that AF suppression may reduce the risk of dementia; however, limited information currently exists on optimal AF treatment strategy to alleviate the risk of dementia.

OBJECTIVE

The goal of this collaborative study sponsored by BWI is to determine the risk of dementia in patients treated for AF with catheter ablation (CA) versus anti-arrhythmic drugs (AAD).

METHODS

DESIGN: Retrospective observational cohort study.

ANALYSIS: Survival analysis was used to assess the risk of dementia overall and in sex-specific subgroups.

DATA SOURCE: 2000 - 2021 Optum Clinformatics Database.

COHORT: Patients in the CA and AAD groups were matched (1:1) on demographic and clinical characteristics (n = 19,088 for both).

Patients were assigned to the CA group if they underwent an ablation procedure for AF after they filled an AAD prescription for ≥30 days*.

* This study was catheter agnostic

Patients were assigned to the AAD group if they had ≥2 AADs for ≥30 days.

RESULTS

Compared to AADs, CA was associated with a lower risk of dementia by:

41%OVERALL
Hazard Ratio: 0.59
95% confidence interval: 0.52-0.67; p < 0.0001

45%IN MALES
Hazard Ratio: 0.55
95% confidence interval: 0.46-0.66; p < 0.0001

40%IN FEMALES
Hazard Ratio: 0.60
95% confidence interval: 0.50-0.72; p < 0.0001

LIMITATIONS

- Observational studies are susceptible to confounding bias, however the use of propensity-score matching and falsification analyses were used to minimize this risk.
- The Optum Clinformatics Database uses claims from patients with health insurance plans, therefore uninsured or self-insured patients are not represented.
- Diagnoses of interest could not be independently studied due to the retrospective observational design of this study.

KEY TAKEAWAYS

Catheter ablation for AF was associated with a lower risk of dementia by 41% (regardless of the type of catheter) in comparison to AADs.

RELATED ARTICLES

- Kim, D., Yang, PS., You, SC., et al. **Association of rhythm control with incident dementia among patients with atrial fibrillation: a nationwide population-based cohort study.** Age and Aging 2022; 51(1).
- Rusanen M., Kivipelto M., Levälahti E., et al. **Heart diseases and long-term risk of dementia and Alzheimer's disease: a population-based CAIDE study.** J Alzheimers Dis. 2014; 42(1): 183-191.
- G. B. D. Dementia Forecasting Collaborators. **Estimation of the global prevalence of dementia in 2019 and forecasted prevalence in 2050: an analysis for the Global Burden of Disease Study 2019**. Lancet Public Health. 2022; 7(2): e105-e125.

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