

Improving Long-Term Outcomes in Atrial Fibrillation: Temporal Decline in Stroke and Dementia Risk Among Danish Patients – A Danish Nationwide Registry-Based Study, 1995–2025

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SUMMARY OF KEY RESEARCH FINDINGS

Atrial fibrillation (AF) is associated with major long-term complications, including ischaemic stroke and dementia. Over recent decades, AF detection and management have evolved considerably, with earlier diagnosis, increased focus on prevention, and substantially greater use of oral anticoagulation. However, whether these advances have translated into comparable improvements in both stroke and dementia outcomes remains unclear.

In this nationwide Danish registry-based cohort study, the author included 489,705 patients with incident AF between 1995–2025, and compared long-term outcomes between patients diagnosed in 1995–2010 and 2010–2025.¹ Patients were followed for up to 15 years.

The risk of ischaemic stroke declined substantially over time across all age groups. Overall, the hazard of ischaemic stroke was 59% lower in 2010–2025 compared with 1995–2010 (hazard ratio: 0.41; 95% CI: 0.40–0.41).

Late-onset dementia also declined, but to a considerably lesser extent, with a 23% lower hazard in the later period (hazard ratio: 0.77; 95% CI: 0.75–0.79). Thus, while both outcomes improved over time, the decline in stroke was substantially greater than the decline in dementia.

WHAT CHALLENGE DOES THIS ADDRESS?

Stroke prevention has long been a central component of AF management. The author's findings demonstrate substantial improvements in stroke outcomes over time, occurring alongside major changes in AF management, including a marked increase in oral anticoagulation use across all age groups.

However, the much smaller decline in dementia highlights an important remaining challenge. Despite major improvements in stroke prevention, the burden of dementia has not declined to the same extent. This discrepancy suggests that preventing clinically recognised ischaemic stroke alone may not be sufficient to address the long-term risk of dementia in patients with AF, and raises the possibility that additional mechanisms may contribute to the association between AF and cognitive decline.

RELEVANCE TO EUROPEAN PRACTICE

These findings highlight the progress achieved in stroke prevention among patients with AF and reinforce the importance of contemporary preventive strategies. At the same time, they draw attention to dementia as an important long-term concern in AF.

With an ageing population and a growing burden of AF across Europe, preservation of cognitive health is likely to become increasingly relevant in the long-term management of these patients. While the author's observational findings do not directly support changes in clinical practice, they suggest that successful AF management should increasingly consider outcomes beyond overt ischaemic stroke and encourage greater attention to long-term brain health.

WHAT ARE THE NEXT STEPS FOR THE RESEARCH?

An important next step is to better understand the mechanisms linking AF with dementia beyond clinically recognised ischaemic stroke, and to determine whether contemporary AF treatment strategies may influence long-term cognitive outcomes. Therefore, as part of

the author's ongoing research, they are investigating the association between catheter ablation and subsequent risk of late-onset dementia in patients with AF. This will help explore whether rhythm-control strategies may be associated with dementia risk beyond the effects of conventional stroke prevention.

Ultimately, further studies are needed to clarify the mechanisms underlying the AF–dementia association and to determine whether specific treatment strategies can modify this risk. The long-term goal should not only be to prevent stroke in patients with AF, but also to identify strategies that may help preserve brain health.

References

1. Middelfart C. Improving long-term outcomes in atrial fibrillation: temporal decline in stroke and dementia risk among Danish patients – a nationwide registry-based study. Abstract. ESC Congress, 28-31 August, 2026.