

10.2.5 - Cognitive Function and Autonomy in Patients with Atrial Fibrillation

Brain lesions and cognitive decline in patients with atrial fibrillation

Doctor Hennings E; Doctor Bhend K; Doctor Paladini RE; Doctor Aeschbacher S; Doctor Coslovsky M; Professor Rodondi N; Professor Beer JH; Doctor Auricchio A; Doctor Moschovitis G; Doctor Chocano P; Mr Sinnecker T; Professor Conen D; Professor Kuehne M; Professor Bonati LH; Professor Osswald S.

University Hospital Basel, Basel, Switzerland
Bern University Hospital, Inselspital, Bern, Switzerland
University Hospital Zurich, Zurich, Switzerland
Cardiocentro Ticino, Lugano, Switzerland
EOC Cantonal Hospital, Lugano, Switzerland
University of Bern, Bern, Switzerland
University of Basel, Basel, Switzerland
McMaster University, Hamilton, Canada
Rehabilitation Centre Rheinfelden, Rheinfelden, Switzerland

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Background: In addition to clinical stroke, atrial fibrillation (AF) is associated with a high burden of various vascular brain lesions, the majority of which are silent. However, the impact of these lesions on cognitive performance remains unclear.

Purpose: Our aim was to assess the association between vascular brain lesions and cognitive decline in clinically asymptomatic AF patients.

Methods: In a prospective multicentre cohort trial, we included 1536 clinically stable AF patients aged ≥ 65 years and a limited number of patients aged 45–64 years (90% on oral anticoagulation therapy). Patients underwent brain magnetic resonance imaging (bMRI) for the detection of any brain lesions at baseline (ischemic brain lesions and microbleeds) and yearly cognitive assessment using different standardized tests. Cognitive decline was defined as a measurement >1 standard deviation of the age-education standardized baseline population, compared with individual baseline levels. Multivariable adjusted Cox regression analyses were performed to assess the relationship of baseline brain lesions presence with cognitive decline during follow-up.

Results: At the time of inclusion, 1030 (67%) of 1536 patients (mean age 72 ± 8 years, 73% male) had one or more vascular brain lesions on baseline MRI. Based on the Montreal Cognitive Assessment score (MoCA), cognitive decline developed in 159 (10%) patients during a mean follow-up of 4.8 years. The incidence rate (per 100 person-years) for cognitive decline (MoCA score) was 3.64 and 1.82 in patients with and without brain lesions, respectively. After multivariable adjustment, the hazard ratio (95% CI) for cognitive decline (MoCA score) was 1.29 (0.85-1.96). The association of brain lesions with cognitive decline was 1.57 (1.02-2.40) for the Digit Symbol Substitution Test (DSST), 1.28 (1.01 to 1.63) for the semantic fluency test (SFT), and 0.91 (0.69-1.21) for the Trail Making Test Part A (TMT-A).

Conclusion: In our contemporary AF cohort, two thirds of patients had brain lesions on baseline MRI, and these lesions were predictive of worse cognitive outcomes in the mid-term on some of the tests used. The full effects on cognitive outcome will be obtained during even longer follow-up.