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### Atrial fibrillation in elderly patients with syncope and dementia: clinical insights from a large multicenter Italian registry

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**Background:** Syncope and dementia have a high prevalence in elderly individuals. Atrial fibrillation (AF) frequently occurs at advanced age. The coexistence of these conditions can be indicative of a clinically relevant frail status.

**Purpose:** The aim of this study was to evaluate the characteristics and the long-term outcome of AF patients with dementia and a history of syncope.

**Methods:** We evaluated the Syncope and Dementia (SYD) Registry. Data were collected by 11 Geriatric Departments between 2012 and 2016. Follow-up was closed at the 12-month evaluation.

**Results:** During the study period, 522 patients (women – 324, 62.1%; MMSE: 17±6) were enrolled. Of these 138 (26.4%) have or presented a history of AF. Patients with AF were older (85±6 vs. 83±6 years,  $p=0.012$ ), with a higher heart rate (78±17 vs. 73±14 bpm,  $p<0.001$ ), had a more complex clinical picture with an increased number (3.9±2.0 vs. 3.0±1.8,  $p<0.001$ ) and severity (1.8±0.3 vs. 1.6±0.4,  $p<0.001$ ) of comorbidities, as assessed with the Cumulative Illness Rating Scale. In particular, the prevalence of diabetes (28.3 vs. 20.1%,  $p=0.047$ ), heart failure (13.8 vs. 7.3%,  $p=0.023$ ) and stroke/TIA (26.1 vs. 17.7%,  $p=0.035$ ) was higher in patients with the arrhythmia. Cardiac syncope was more frequently diag-

nosed at the final evaluation (18.8 vs. 4.9%,  $p<0.001$ ). Even if the use of antipsychotics (13.0 vs. 27.6%,  $p=0.001$ ) and cholinesterase inhibitors (6.5 vs. 16.4%,  $p=0.004$ ) were less used in AF subjects, the total number of prescribed drugs was higher (6.9±2.9 vs. 5.9±2.7,  $p<0.001$ ). At multivariate analysis (overall predictivity: 75%), AF patients were characterized by advanced age ( $p=0.041$ ), a higher severity of comorbidities ( $p<0.001$ ), a greater number of drugs ( $p=0.020$ ), an increased heart rate ( $p=0.004$ ) and a more frequent presence of cardiac symptoms ( $p=0.049$ ).

At one-year follow-up (8 patients lost), the mortality rate in AF patients was 27.7% (N=36/130). Deceased patients presented a greater degree of disability (number of lost activities of daily living: 3.7±2.3 vs. 2.8±1.9,  $p=0.020$ ) and a higher heart rate at baseline (85±17 vs. 76±15 bpm,  $p=0.006$ ). Multivariate analysis (overall predictivity: 74%) confirmed the association of disability ( $p=0.039$ ) and heart rate ( $p=0.045$ ) with prognosis.

**Conclusions:** AF is frequently present in patients with dementia and a history of syncope. It is usually associated with a more complex clinical picture and high long-term mortality. Heart rate and a higher degree disability seem to be related to prognosis.