Title and subtitle: Atrial fibrillation in ischemic stroke: prevalence, long-term outcomes and secondary prevention therapy.

Abstract: Atrial fibrillation (AF) is a very-well known risk factor for ischemic stroke. The general aim of the study was to assess prevalence of AF in patients with first-ever ischemic stroke and to evaluate the impact of AF on outcomes during 10-year follow-up after the stroke event.

The thesis consists of a retrospective register-based study and a post hoc analysis from the prospective case-control study. The main study population of patients with first-ever ischemic stroke (Study I, II, IV, V) was enrolled in the Lund Stroke Register during 2001-2002 and followed up for 10 years from date of enrollment. Patients treated with ischemic stroke at Mayo Clinic (Rochester, MN, USA) were prospectively included in the case-control study and underwent three-week ambulatory ECG monitoring for AF detection (Study III).

For AF detection prior to stroke and during follow-up in the register-based study the combined approach was used with screening through regional electronic ECG archive and via linkage with the Swedish National Patient Register (Study I, IV), in which validity of the AF diagnosis was assessed against ECG documentation (Study II). Clinical, echocardiographic and electrocardiographic predictors of AF onset were evaluated using medical records and sinus rhythm ECG taken at stroke admission (Study III, IV). Oral anticoagulant therapy (OAC) was analyzed through Lund University Hospital anticoagulation database (Study I, V). All-cause mortality was assessed using the Cause of Death Register (Study V).

Pre-stroke prevalence of AF appeared to be 32.4% and was associated with a high CHA²DS²-VASc score (Study I). In stroke patients, short runs of AF on prolonged ambulatory ECG monitoring were associated with increased left atrial volume index (Study III). A high CHA²DS²-VASc score predicted the development of AF during the 10 years following the first-ever ischemic stroke (Study IV). Permanent AF was associated with the worst prognosis, while the best prognosis during the 10-year follow-up was observed for ischemic stroke patients with recurrent atrial fibrillation treated with OAC (Study V). In conclusion, ischemic stroke patients with a high CHA²DS²-VASc score may be the target group for continuous AF screening and initiation of OAC therapy upon AF detection.

Key words: atrial fibrillation, ischemic stroke, CHADS², CHA²DS²-VASc, national patient register, ECG

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