Abstract: P3787

Incidence, risk predictors, and mortality risk of new heart failure in an incident hospitalised atrial fibrillation cohort: a western australia population-based study, 2000-2010

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Background: Atrial fibrillation (AF) is a risk factor for heart failure (HF) and new HF onset is associated with increased mortality.

Purpose: To determine the incidence, risk predictors and mortality risk of a new HF hospitalisation event in patients after incident AF hospital admission.

Methods: This was a contemporary, population-based retrospective cohort study which included all Western Australian residents, aged 25 to 94 years, who survived an incident hospitalisation for AF, between 2000 and 2010. Patients hospitalised with AF that had no previous AF or HF hospitalisations up to 15 years beforehand were identified. Time to first-ever HF hospitalisation in the three years following incident AF was assessed using Kaplan-Meier methods, accounting for all-cause death as a competing risk. Cox proportional hazards models were used to determine independent predictors of HF. The association of first HF with subsequent survival was estimated using a time-dependent HF variable with other risk covariates in a proportional hazards model.

Results: The cohort comprised of 34,999 patients, 56.8% male, with a mean age of 71.0 (SD 13.1) years. Females were on average 6 years older than males (P<0.001). Among the cohort, 20.4% had died from any cause at 3-year follow-up. The cumulative incidence of a first HF hospitalisation event at 3 years (n=4298), after accounting for death as a competing risk, was 12.3% (95%CI 11.9%-12.6%). Most HF hospitalisations (56.2%) occurred within the first year after incident AF admission (median of 279 days; IQR 64-649 days). Of the incident HF hospitalisations, 88.9% were an emergency admission. Independent predictors of an increased risk of HF hospitalisation included older age and a history of hypertension, diabetes, excessive alcohol consumption, myocardial infarction, chronic obstructive pulmonary disease, valvular heart disease, and chronic kidney disease (all P<0.0001). Incident AF patients who were hospitalised for first HF had an adjusted hazard ratio of 2.89 (95% CI; 2.71-3.08) for all-cause mortality (P<0.0001).

Conclusion: Hospitalisation for HF is a frequent and troublesome problem in patients after incident AF admission, and is independently associated with increased risk of mortality. The clinical predictors of new HF occurrence highlight the importance of assessment and comprehensive management of associated risk factors and comorbid diseases in order to prevent HF morbidity and mortality in AF patients.