Identifying predictors of repeat hospitalisations in atrial fibrillation: the REVIEW AF study

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**Introduction**: Atrial fibrillation (AF) is associated with significant health care burden. Hospitalisations are the main driver of health care resource utilisation and cost in AF. Consistent predictors of AF related emergency department (ED) presentations and hospitalisations have not been well characterised. The aim of this study is to characterise predictors of repeat ED presentations and hospital admissions in a cohort of individuals with AF.

**Methods**: Individuals presenting to the ED of three major tertiary centres in Adelaide, South Australia from March 2013 to March 2014 with a primary diagnosis of AF, were screened by electronic health records. Clinical, socio-demographic and other variables, including the provision of advice to manage future AF episodes and referral to a cardiologist for follow up care, were collected to identify predictors of repeat AF related ED presentations and hospital admissions.

**Result**: The study cohort comprised of 437 individuals with an AF related index presentation. Mean age was 69±15 years and 49.9% were male. Individuals were followed for a mean of 3.7±0.4 years to determine reasons for re-presentation to hospital. There were 2304 repeat unplanned presentations that occurred during follow up. The index presentation to ED with AF resulted in admission to hospital in 72.3% of cases. AF accounted for 21% of all repeat hospital admissions, with 17% attributable to other cardiovascular causes and 62% of all hospital admissions over follow up due to other causes. Multivariate analysis did not identify any demographic or clinical factors predictive of re-presentation to hospital. The presence of non-standardised advice to manage future episodes of AF (“AF action plan”) was associated with a significant increase in the risk of repeat ED presentations (Odds Ratio [OR] 6.7, 95% confidence interval [CI] 2.4-18.3; p<0.0001), and hospital admissions for AF (OR 2.8, 95% CI 1.00-7.63; p=0.05; see Table).

**Conclusion**: A hospital presentation with a primary diagnosis of AF identifies individuals who pose significant health care burden. Non-standardised advice to manage future episodes of AF is associated with an increased risk of ED re-presentation and hospital admission for AF. Further research is required to understand this finding. This data supports the need for structured comprehensive interventions targeted at improving patient education and self-management strategies to reduce the growing tide of AF related health care burden.