Sepsis associated new onset atrial fibrillation; risk factors and long term outcomes

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Background: Atrial fibrillation (AF) is commonly encountered in the setting of systemic inflammation or infection. The optimal management of AF in this cohort and their long-term AF-related clinical outcome are unknown.
Purpose: The aims of our study were to evaluate the traditional and non-traditional AF risk factors and long-term AF-related clinical outcomes in patients who were diagnosed with new onset AF in the setting of sepsis.
Methods: In this retrospective cohort study, we used the medical records to identify patients who were diagnosed with the new onset AF during hospitalization for sepsis at our centre between 2013 and 2017. The primary clinical outcomes included 24-month risk of ischaemic stroke, major bleeding (gastrointestinal or intracranial bleeding), the recurrence of AF and the all-cause mortality. The patients with known AF or those who died during the index admission were excluded from the analysis.
Results: 5598 patients were admitted to our hospital between 2013 and 2017 with sepsis. Of this cohort, 126 patients (mean age 69.7 years, 62.7% male) developed new onset AF during the index hospital admission (72.2% required ICU admission). 38 patients (30.1%) died during the initial hospitalisation while 88 patients (69.9%) were discharged from hospital (32% anticoagulated). 14 patients (16%) died within 24 months. Hypertension (59%), CKD (30%), diabetes (21%), and CCF (17%) were the most common risk factors. Mean CHA2DS2VASC score was 2.56±1.4 and mean HAS BLED score was 2.5±1.3. Mean CRP and WCC were 228±119 and 12.3±9.1 respectively. Comparing risk factors, only HASBLED score showed statistical significance on 24 months mortality (p=0.036, 95% CI 0.43–1.52). The composite incidence of all-cause mortality and ischaemic stroke was three times lower in anticoagulated patients compared with those who did not receive anticoagulation even though this did not reach statistical significance (7.1% v 21.6% respectively, p=0.07; RR=0.32; 95% CI=0.79–1.36). There was no statistically significant difference between the two groups for major bleeding events (3.5% v 3.3% respectively, p=0.68; RR=1.07; 95% CI=0.10–11.3). Rhythm and rate control therapies showed no significant difference on the composite outcome of all-cause mortality, ischaemic stroke and recurrence of AF (28.0% v 28.9%, p=0.92; RR=0.96, 95% CI=0.49–1.88), however, there was a trend towards less recurrence of AF in patients who received rate or rhythm control therapies (12% vs 18% respectively p=0.44; RR=0.67; 95% CI=0.24–1.85).
Conclusions: Our study suggests that anticoagulation therapy in patients with sepsis associated new onset AF may decrease composite of all-cause mortality and ischaemic stroke without increasing major bleeding risk. Rhythm and rate control strategies did not decrease all-cause mortality, ischaemic stroke or risk of recurrence of AF. These findings can provide benchmarks for design of randomized control trials.