Introduction:
Patients with infection presenting with atrial fibrillation (AF) are frequent in emergency departments (ED). This combination is probably related to a poor prognosis compared to lone AF or infection, but existing data are scarce.
Aim: to describe the prevalence and prognosis for AF and infection individually and concomitantly in an ED setting.

Methods:
Cohort study in adult (≥18 years) ED patients with ECG performed on presentation at Odense University Hospital and Hospital of South West Jutland, Denmark, from March 13 2013 to April 30 2014. AF was identified by electronic ECG records, and infection was identified based on discharge diagnoses. The absolute 30-day mortality and stroke rate were calculated for all patients, for those with AF, infection and for those with both.

Results:
Among 39393 contacts to the ED, 27879 patients (median age 66, 50 % women) had an ECG recorded and were included in the study. 2341 (8.4%) had AF, 5672 (20.3%) had an infection and 670 (2.4%) had both infection and AF, of which 230 (34.3%) had no previous AF diagnosis or AF identified by ECG in the past 10 years (new-onset AF).
In these groups, 30-day mortality was 11.3% in patients with infection, 10.4% in patients with AF and 22.6% in patients with new-onset AF and infection. One-year stroke rate in patients with AF was 61.7 /1000 person-years (95% CI, 49.6 to 76.7), 21.2 /1000 person-years (95% CI, 17.2 to 26.2) in patients with infection and 62.5 /1000 person-years (95% CI, 39.1 to 120.2) in patients with new-onset AF and infection. Among patients with new-onset AF and infection, 42.6% had registered further AF episodes within one year after discharge, compared to 36.4% in patients with new-onset AF without infection.

Conclusion:
Compared to ED patients with lone AF or infection, patients with concomitant new-onset AF and infection show an increased 30-day mortality, one-year stroke rate, and increased risk of further AF episodes.