

# Is it time to calculate renal function in non valvular atrial fibrillation patients to stratify the risk of future events?

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**Purpose:** Chronic kidney disease with renal dysfunction (RD) is associated with an increased risk of thromboembolic and hemorrhagic events in non-valvular atrial fibrillation (NVAF). Although the current European Guidelines on NVAF suggest that an accurate evaluation of the renal function is useful in hemorrhagic risk stratification, it has not been yet considered in thromboembolic risk score CHA<sub>2</sub>-DS<sub>2</sub>-VASc. The aim of our study was to evaluate the prognostic role of RD in a wide “real world” population of NVAF outpatients.

**Methods:** From November 1, 2009 and October 31, 2013, we enrolled 3,398 consecutive NVAF patients. Clinical data were derived from the E-data chart for outpatient clinic (Cardionet®) of Cardiovascular Center of Trieste, Italy, and collected in a regional Data Warehouse. In 1,509 patients, glomerular filtration rate (GFR) was available at the first visit. Renal dysfunction (RD) was defined as GFR <60ml/min estimated using MDRD equation. The events recorded during the follow-up were death, cardiovascular hospitalization (CVH), major bleeding (including fatal bleeding or leading to transfusion, a decrease in hemoglobin level of 20 ≥g/L or hospital admission) and thromboembolism.

**Results:** The median patient age was 75 (range 68-81), 39.7% were male, 38% had paroxysmal, 31.9% persistent and 30.1% permanent NVAF; 1,217 (80.1%) had hypertension, 466 (30.8%) diabetes mellitus, 295 (19.5%) heart failure, 491 (32%) coronary artery disease, 196 (13%) prior stroke or transient ischemic attack, 23 (1.5%) previous bleed-

ing episode, 31.9% and 13.2% had Charlson Comorbid Index from 3 up to 5 and >5, respectively. 1,014 patients (67.2%) were treated with more than 5 drugs. Median HAS-BLED score was 3 (range 2-4) and ≥3 in 70% of patients; median CHA<sub>2</sub>-DS<sub>2</sub>-VASc score was 4 (range 3-5) and ≥2 points in 91.1% of patients. During a median follow-up of 27 months, 531 (35%) deaths or CVH, 113 (7.5%) thromboembolic events and 24 (1.6%) major bleedings were recorded. The presence of RD identified a group of older patients with more cardiovascular (CV) risk factors, more severe heart disease, higher Charlson Index, more concomitant medical therapies. During the follow-up, we recorded 48% vs 30% of deaths or CVH (p<0.001), 10% vs 7% of thromboembolic events (p=0.02) and 2.5% vs 1% of hemorrhagic events in those with and without RD (p=0.09). Patients with RD showed a global worse prognosis for CVH/death-free survival independently from the prescription of anticoagulant (p<0.001). Instead, considering thromboembolism/major bleeding free survival, patients with RD had a worse prognosis only if taking anticoagulants (p=0.038). We can hypothesize that it could be probably related to a relatively higher number of thromboembolic events in the past medical history in the anticoagulant group versus antiplatelets or not therapy (11.4% vs 9.5% vs 5.1%, respectively, p<0.001).

**Conclusions:** In a “real world” of NVAF outpatients, RD identified a subgroup of older patients, with more complex CV and non CV disease at higher risk of CV, thromboembolic and hemorrhagic events. RD was associated with a higher rate of thromboembolism/major bleeding in patients on anticoagulants.

**KEYWORDS:** non valvular atrial fibrillation, renal dysfunction, thromboembolic risk, antithrombotic drugs, mortality.

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## Literature

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