

Ranolazine is associated with a reduced incidence of atrial fibrillation in patients with chronic coronary syndrome: the results of a real-world analysis of an Italian population

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Background: Ranolazine (Ran) is an anti-anginal drug acting as a late sodium current inhibitor at a cell membrane level. This mechanism of action could be implicated in the control of arrhythmia development. Indeed, some evidence supports the efficacy of Ran as an anti-arrhythmic agent, with a synergistic effect with that of Class III agents, namely amiodarone and dronedarone.

Aims: Aim of this study was to evaluate if the use of Ran in patients with chronic coronary syndrome (CCS) in comparison with other treatments (No-Ran), was associated with a lower incidence of atrial fibrillation (AF) in a real-world clinical setting in Italy.

Methods: Patients included in the database of the National Health System were evaluated (N=6.1 million); the recorded information concerned hospitalizations with the related diseases, clinical events, visits and drug therapy. Patients hospitalized for any cause and discharged with a diagnosis of angina between 2011 and 2020 (ICD-9-CM codes: 413-414) were included in the study provided they had not experienced an AF episode in the 12 preceding months (characterization period). Study population was divided into the Ran (at least one drug prescription) and in the No-Ran cohorts. The mean follow up was 4.3 years for the Ran and 5.0 years for the No-Ran cohorts, respectively.

Results: The study population included N=171,015 patients (mean age: 72 years, men: 66%). Among them, N=148,808 (No-Ran cohort) were treated with other therapies while N=22,207 (Ran cohort) received Ran. After propensity score matching, Ran (N=6,384) and No-Ran (N=25,536) cohorts did not differ for age, Charlson comorbidity index, use of aspirin, beta-blockers, Ca-antagonists and nitrates. The incidence of a new episode of AF during the follow-up period was 5.3% and 9.6% in the Ran and in the No-Ran cohorts, respectively (p<0.001). The Cox-regression analysis showed that independently of age, male gender, heart and renal failure, COPD, use of beta-blockers, Ca-antagonists and nitrates, and of cardiovascular procedures, Ran therapy was associated with a 41% risk reduction to develop AF (HR=0.59, 95%CI: 0.53-0.67, p<0.001).

Conclusions: Our real-world study, performed in a whole subset of the Italian population, showed that Ran use in a long-term follow-up was associated with a lower incidence of AF in patients with CCS.