

## **Incidence of ticagrelor-related dyspnea leading to emergency department admission: a three year population based cohort-study**

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**Introduction:** The aim of the present study was to define the occurrence rate of emergency department (ED) admission for dyspnea in acute coronary syndrome (ACS) patients treated with ticagrelor.

**Methods:** We conducted a population-based cohort study on about 850,000 residents of the Florence metropolitan area, by using data from healthcare records obtained from the administrative archives. Between 2012 and 2014, 1,073 subjects in the Florence metropolitan area had at least one prescription of ticagrelor.

**Results:** 234 patients were diagnosed with 'respiratory system or other chest symptoms' or 'other diseases of lung', and among them we identified 20 subjects with ticagrelor-related dyspnea. These, plus the 979 non-event subjects (receiving ticagrelor but not developing dyspnea), contributed to 413 person-years overall. The dyspnea incidence rate was 4.84 per 100 person-years (95% CI: 3.12-7.51). The rate was higher in females and for subjects older than 70 years and the overall rate is lower than reported in post-marketing investigations conducted in hospitalized patients.

**Conclusion:** In order to reduce the incidence of ticagrelor-related dyspnea leading to ED admission and to maintain antiplatelet therapy compliance and a high quality of life without compromising cardiovascular safety among ACS patients who present at ED with respiratory distress and no other cardio-respiratory and metabolic conditions, prescribers could consider ticagrelor replacement, in patients who cannot tolerate dyspnea. However, further studies are still needed in order to obtain definitive data on the incidence of ticagrelor-related dyspnea, as well as to correctly define the interaction between gender and age, and to investigate dose-response relationship and individual susceptibility.