

Ticagrelor-related dyspnea in patients with acute coronary syndrome: a three year cohort study

E. Lucenteforte¹, N. Lombardi¹, A. Barchielli², M. Torrini³, A. Mugelli¹, A. Vannacci¹

¹Dept. of Neurosciences, Psychology, Drug Research and Child Health, School of Human Health Sciences, University of Florence, Italy

²Dept. of Epidemiology, Local Health Authority n°10, Florence, Italy

³Dept. of Critical Care Medicine and Surgery, University of Florence and Azienda Ospedaliero-Universitaria Careggi, Florence, Italy

Introduction: The occurrence of dyspnea in acute coronary syndrome (ACS) patients has always been considered a challenging diagnostic and therapeutic clinical scenario. In the last few years, the potential association between ACS and dyspnea has also become more challenging with the increasing use of ticagrelor in these patients due to drug's beneficial effects on ischaemic event prevention and mortality, since ticagrelor can induce dyspnea as adverse drug reaction (ADR).

Aim: In order to better understand the post-marketing incidence of ticagrelor-related dyspnea, as well as its implication on drug discontinuation, we conducted a retrospective cohort-study on all ACS subjects admitted to Florence Hospitals for dyspnea.

Methods: Between January 1, 2012 and December 31, 2014, 1174 consecutive patients treated with ticagrelor after an ACS were identified. Among these, for 1073 was possible collect data on hospital discharge records. Demographic records and drugs utilization were obtained from administrative archives of the Florence Local Health Authority. The occurrence of respiratory disorders or ticagrelor-related dyspnea was recorded.

Results: Among 1073 patients, 75.5% were males with a mean age of 55 years (standard deviation 12.1 years). A total of 261 patients (24%) had respiratory disorders. In the present study we observed that a high proportion of patients experienced respiratory disorders during ticagrelor administration. A high number of these events could be ticagrelor-related dyspnea.

Discussion: It has been hypothesized that the sensation of dyspnea in ticagrelor-treated patients is triggered by adenosine, because ticagrelor inhibits its clearance, thereby increasing its concentration in the circulation. We would like to emphasize the possibility of a 'real world' underestimation and mismanagement of ticagrelor-related dyspnea also caused by the difficulty to fully ascertain its causality assessment, especially in ACS elderly patients treated with several drugs. Physicians should consider this potential association in daily clinical practice to reduce time of diagnosis.

Conclusions: In conclusion, in order to better manage ACS patients who present at ED with respiratory distress and no other cardio-respiratory and metabolic conditions, it is necessary for prescribing healthcare professionals to consider ticagrelor replacement in order to maintain in ACS patients (1) antiplatelet therapy compliance and (2) a high quality of life without compromising their cardiovascular safety. Our study could be useful to identify the optimal strategy to manage ticagrelor-related dyspnea and its possible consequent replacement therapy.