OBSERVATIONAL STUDY REPORT SYNOPSIS

Health outcomes of patients with acute coronary syndromes prescribed ticagrelor in UK primary care: a retrospective cohort study

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Milestones:

Final protocol	15 February 2015
Start of data collection	25 February 2015
End of data collection	31 March 2015
Protocol amendment	29 February 2016
Final report	14 March 2019

Phase of development: Not Applicable – Observational study

Sponsor: AstraZeneca

This study was performed in compliance with Good Clinical Practice, including the archiving of essential documents.

Summary:

The aim was to describe the characteristics and quantify the efficacy and safety outcomes, following ACS, in a real-world English patient population prescribed ticagrelor. The study was a retrospective cohort study of patients prescribed ticagrelor in primary care, following ACS, with a first prescription between December 2010 and March 2015. Patients were followed for up to 12 months on-treatment. The study used the Clinical Practice Research Datalink which consists of English linked multi-source data from primary and secondary care (Hospital Episode Statistics), and Office for National Statistics Mortality data. The primary outcome was a composite of hospitalised MI, hospitalised stroke and vascular death. Secondary outcomes included individual vascular events, bleeds (based on **BARC type ≥2)** and dyspnoea. Crude incidence rates were presented per 100 person-years (95% CI) and Kaplan-Meier survival curves were generated showing the probability (95% CI) of being event free at one month intervals. No adjustments were made due to limited study population and low number of events and thus insufficient statistical power for such analyses.

Altogether, 1650 patients were included. Of these 72.4% were men, 23.5% aged ≥75 years, and 85.0% received revascularisation (PCI or CABG) at time of ACS. The incidence rate of the primary composite outcome per 100 person years was 5.3 (3.8–6.8), and for the individual vascular events MI 3.3 (2.1–4.5), stroke 0.9 (0.3-1.5) and vascular death 1.4 (0.6-2.2), respectively. For those with revascularisation, the incidence rate of the composite outcome (3.9 (2.6–5.3)) and MI (2.3 (1.3–3.4)) was lower than among those without revascularisation (15.1 (7.9–22.3) and 10.7 (4.6–16.7), respectively). However, non-revascularised patients were older (mean age 70.7 vs. 63.6 years), more likely to be women (36.7% vs. 26.0%), with a history of MI (23.0% vs 11.1%) and stroke (12.9% vs. 5.1%).

The overall incidence rate of bleeding per 100 person years was 6.6 (4.9–8.2), with no major difference between elderly (≥75) and younger patients (7.1 (3.4–10.8) vs. 6.4 (4.6–8.3), respectively). The incidence rate of hospitalised bleeds was 2.5 (1.5–3.5) and was similar in elderly and younger patients (3.5 (0.9–6.2) vs. 2.2 (1.1–3.3)). 32.4% of the overall cohort had respiratory disease or prior dyspnoea of unknown cause at baseline. During the study period the overall incidence rate of dyspnoea was 21.6 (18.6–24.6) and for dyspnoea requiring hospital care 1.7 (0.9-2.6). Among those without respiratory disease or prior dyspnoea, the incidence rate of new dyspnoea was 14.5 (11.6–17.5) and the incidence of hospitalised dyspnoea was 1.4 (0.5–2.3).

In conclusion, in this study the crude incidence rate of a composite of hospitalised MI, hospitalised stroke and vascular death was 5.3 (3.8-6.8) per 100 person years in this population. The crude incidence rates for bleeding with hospital care was 2.5 (1.5–3.5) and dyspnea requiring hospital care 1.7 (0.9-2.6). The interpretation of this real-world study is limited due to survival bias, lack of a comparator and statistical modelling to assess the role of risk factors. Modelling of risk factors was not done because the number of events were considered too few for assessing hazard ratios with sufficient precision and statistical power.

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