

## Changes in antithrombotic treatment in patients with abdominal aortic aneurysmal disease and incident atrial fibrillation: a population-based case-crossover analyses

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**Background:** Abdominal aortic aneurysmal (AAA) disease is associated with a high risk of cardiovascular events, and prophylaxis with platelet-inhibitors are recommended at diagnosis. Incident atrial fibrillation (AF) changes that indication to oral anticoagulative (OAC) therapy. However, it is unknown to what extent the recommended change of indication is reflected in the actual antithrombotic treatment in clinical practice.

**Purpose:** To evaluate the antithrombotic therapy after an incident diagnosis of atrial fibrillation in patients with established AAA.

**Methods:** In this population-based case-crossover study, using nationwide Danish registries, we identified all patients registered with a diagnosis of AAA between 1997 and 2018, and a subsequent diagnosis of AF. The case-crossover analysis was performed to compare the within-subject antithrombotic therapy in 1-year time-periods before and after AF diagnosis in the study population. A blanking period of 30 days before AF-diagnosis was applied to avoid bias from potentially delayed hospital diagnosis of AF (Figure 1.1). We excluded patients with no eligible reference window due to recent cohort entry and patients with no AF-related indication for shift to OAC (CHA2DS2-VASc score of <1 in men and <2 in women). Odds ratios (OR) with 95% confidence intervals (CIs) comparing antithrombotic therapy before and after AF diagnosis was calculated using McNemars test for matched pair's data. Subgroup analyses of patients diagnosed with AAA between 2011 and 2018 were performed to evaluate changes after

introduction of current antithrombotic treatment regimens and direct oral anticoagulants.

**Results:** A total of 3052 patients were included in the case-crossover analyses. Mean age was 77.8 years and 22.3% were females. Median time from AAA to AF diagnosis was 4.6 years (IQR: 2.6–7.8). Stroke risk in the study population was high with a median CHA2DS2-VASc score of 4 (IQR: 3–5). In the case-period after AF diagnosis, 1004 prescription claims of platelet-inhibitors were registered compared with 1461 claims in the control-period before AF diagnosis, corresponding to a matched OR of 0.31 (95% CI, 0.26–0.36) (Figure 1.2). Conversely, there were 1392 prescription claims for OAC in the case-period compared with 355 in the control-period, corresponding to an OR of 15.75 (95% CI, 12.38–20.31). When restricting the study-population to patients diagnosed with AAA during 2011–2018, the OR was 0.11 (95% CI, 0.07–0.16) for a prescription claim of platelet-inhibitors and 17.7 (95% CI, 11.22–29.17) for OAC before and after AF diagnosis (Figure 1.2).

**Conclusion:** In patients with established AAA and high risk of stroke, incident AF was associated with low likelihood of treatment with platelet-inhibitor and a high likelihood of OAC-treatment compared with before AF. This association was further strengthened in patients diagnosed after 2011.

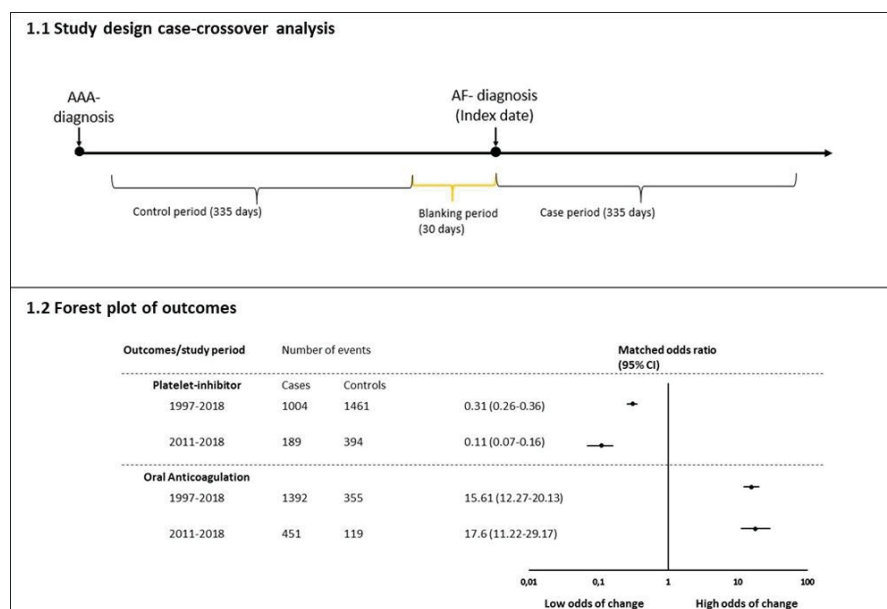


Figure 1