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Background: Dabigatran etexilate is a newer oral anticoagulant developed as an alternative to warfarin for stroke prevention in patients with non-valvular atrial fibrillation (NVAF). Although the efficacy and safety of dabigatran were established in a randomized trial, evaluation of its effects in routine clinical practice is ongoing.

Objectives: Quantification of the comparative safety and effectiveness of dabigatran in routine care within two large US commercial health insurance databases, Truven MarketScan (MS) and Optum Clinformatics (OC).

Methods: Cohort design with propensity score (PS) matching to compare new initiators of dabigatran with warfarin between Oct 2010 and Jun 2013. Primary outcomes were stroke and major bleeding. Proportional hazards regression of time to outcome was conducted separately within each data source and results were pooled.

Results: There were 22,336 PS matched dabigatran and warfarin initiators with NVAF pooled across data sources (MS = 18,276; OC = 4,060). The matching resulted in well balanced cohorts with no individual characteristic having an absolute standardized difference >0.1. The average follow-up for the as-treated analyses was 5 months for dabigatran and 4 months for warfarin. There were 65 strokes amongst dabigatran initiators and 78 strokes amongst warfarin initiators for a pooled HR of 0.72 (95% CI 0.52 – 1.00) (MS; HR = 0.64, 95% CI = 0.44-0.93, OC; HR = 1.11, 95% CI = 0.54-2.31). For the outcome of major hemorrhage, there were 395 events amongst dabigatran initiators and 459 events amongst warfarin initiators for a pooled HR of 0.74, 95% CI = 0.64 – 0.84) (MS; HR = 0.77, 95% CI = 0.67 - 0.89, OC; HR = 0.51, 95% CI = 0.34 - 0.76). Pooled results in the full cohort were fairly consistent across numerous subgroup and sensitivity analyses, however, comparative conclusions within some subgroups are limited by small numbers and limited follow-up time.

Conclusions: Analyses from this ongoing long-term study program suggest a reduced risk of both stroke and major hemorrhage for dabigatran relative to warfarin. Continued follow-up will increase the sample size, permitting greater precision in effect estimates.

858. Comparative Effectiveness and Safety of New Oral Anticoagulants (NOACs) and Warfarin in Patients with Atrial Fibrillation: A Multi-Database Study in the US and UK

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Background: Potential bias due to channelling of patients to newly approved medications due to patient, physician, and system-related factors as well as rapid changes in the characteristics of the user population during the early phase after launch pose major methodological challenges.

Objectives: To compare characteristics of patients starting on different oral anticoagulant(OAC) medications and the risk of ischaemic stroke (IS), acute myocardial infarction(AMI) as well as major bleeds (MB) over time since launch.

Methods: Using the US MarketScan commercial claims and the UK CPRD database, we included atrial fibrillation/flutter patients who started OAC if they were enrolled at least 6 months and not using oral OAC medications during the six months prior to start of OAC(index date), were 18 years or older. Hazard ratios(HR) for IS, AMI, and MB were estimated in users of new oral anticoagulants (NOACs, dabigatran and rivaroxaban) versus warfarin at different time periods after launch using multivariable Cox regression and propensity scores(PS) methods. Confounder distributions among the groups were summarized as PS and time trends since launch were assessed.

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Results: In general, the US MarketScan population was at lower risk for stroke compared to the UK population(younger and had lower mean CHA2DS2-VASc score) although the trend over time was similar between different OAC medications. There was substantial overlap in PS distributions between the treatment groups in both datasets. The risk of IS for NOACs was lower in MarketScan [HR 0.74, 95%CI: 0.61; 0.90] but higher in CPRD [HR: 1.31, 95%CI: 1.04; 1.65]. The risk for AMI was similar for NOACs and warfarin whereas the risk of MB was higher in NOACs compared to warfarin [HR: 1.34, 95%CI: 1.11; 1.62 in MarketScan and 1.41, 95%CI: 1.06; 1.87 in CPRD]. HRs were similar from PS methods.

Conclusions: Differences between characteristics for NOAC users compared to warfarin users were small with no noticeable change over the years suggesting minimal channelling bias after launch. Treatment with NOACs seems to be have lower risk IS for US patients compared to UK patients.

859. Clinical Events Preceding Changes During Treatment With Non-VKA Oral Anticoagulants In Patients With Atrial Fibrillation

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Background: Switching between oral anticoagulants and treatment discontinuation are common events during therapy with non-vitamin K antagonist oral anticoagulants (NOACs) in patients with atrial fibrillation. However, knowledge on the reasons leading to these treatment changes is scarce.

Objectives: To identify potential reasons for treatment changes during NOAC therapy in patients with atrial fibrillation through exploration of clinical events preceding these changes.

Methods: We performed a nationwide register-based study including all registered Danish atrial fibrillation patients initiating a NOAC in the period August 2011 to October 2015 (n = 43,500). We explored reasons leading to changes in NOAC treatment by identifying clinical events preceding switches from vitamin K antagonists (VKA) to NOAC, switches from NOAC to VKA, and discontinuations of NOACs.

Results: Among 22,764 NOAC users experiencing ≥1 treatment changes during the study period, 14,206 switched from VKA to NOAC, 4,670 switched from NOAC to VKA, and 8,151 discontinued NOAC. Approximately half of treatment changes were preceded by a hospitalization and in 1 in 5 treatment changes, a relevant preceding clinical event was identified. Switches from VKA to NOAC were most often preceded by a thromboembolic event (7.3%), whereas cardioversion was the most common event prior to a switch from NOAC to VKA (10.7%). Discontinuations were most often preceded by bleeding events (7.3%).

Conclusions: Treatment changes during NOAC treatment in atrial fibrillation are rarely preceded by a clinical event related to the use of anticoagulants. Potential reasons for treatment changes can be identified by considering preceding clinical events using health registries. Detailed information on reasons for treatment changes requires data acquired directly from the patient or physician.

860. Hospitalization and Length of Stay Among Patients with Non-Valvular Atrial Fibrillation Taking Dabigatran or Warfarin: A Population-Based Cohort Study

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Background: Previous studies showed that dabigatran use was associated with reduced hospital resources utilization when compared to warfarin in clinical trial settings. However, this has not been well studied in the general population, especially among Asians.

Objectives: To compare the rate of hospitalization and length of stay (LOS) associated with the use of dabigatran and warfarin in the real-life setting.

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