DSEN ABSTRACT

Comparative Safety and Effectiveness of Direct Oral Anticoagulants in Patients with Atrial Fibrillation: A Multicentre Cohort Study (Q16-13)

A study conducted by the Canadian Network for Observational Drug Effect Studies (CNODES)

Summary

- Apixaban is associated with lower risks of ischemic stroke and major bleeding, compared with rivaroxaban, and similar risks of these outcomes when compared with dabigatran.
- Rivaroxaban is associated with an increased risk of major bleeding and a similar risk of ischemic stroke, when compared with dabigatran.

Key messages

- This is one of the largest observational studies to date including patients initiating apixaban, rivaroxaban and dabigatran for stroke prevention in non-valvular atrial fibrillation.
- Our findings of lower risks of both bleeding and stroke with apixaban compared with rivaroxaban contribute to the understanding of benefits and risks of DOACs after marketing in the Canadian setting.

Project Lead & Team

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Link to publication

- Durand et al. BJCP. 2020. DOI: 10.1111/bcp.14669

What is the issue?

- Anticoagulation therapy is indicated to prevent systemic arterial embolization and ischemic stroke for patients with non-valvular atrial fibrillation (NVAF).
- Direct oral anticoagulants (DOACs) are replacing warfarin in clinical use due to warfarin's need for frequent monitoring and numerous food and drug interactions.
- No large, head-to-head randomized controlled trials (RCTs) have directly compared different DOACs for efficacy or safety.

What was the aim of the study?

- This study, conducted by the Canadian Network for Observational Drug Effect Studies (CNODES), evaluated the effectiveness and safety (clinical benefits and harms) of different DOACs in NVAF.

How was the study conducted?

- CNODES conducted retrospective, propensity score-matched, cohort studies using administrative healthcare data on 227,579 patients with NVAF who were new users of oral anticoagulants, identified from seven Canadian provinces and two international databases.
- Dabigatran, rivaroxaban, and apixaban were compared pairwise.
- The primary outcome was ischemic stroke or systemic embolization; secondary outcomes included major bleeding, all-cause mortality, myocardial infarction, and a composite outcome of all strokes, major bleeding, and death.
- Hazard ratios (HR) and 95% confidence intervals (CI) were estimated and pooled across sites using meta-analysis

What did the study find?

- Rivaroxaban, compared with dabigatran, did not find a significant difference in the risk of ischemic stroke (HR 1.11; 95% CI: 0.93 to 1.32) but found an increased risk of major bleeding (HR 1.26; 95% CI: 1.09 to 1.46).
- Apixaban, compared with dabigatran, did not find significant differences in the risks of ischemic stroke (HR 0.91; 95% CI: 0.74 to 1.12) and major bleeding (HR 0.89; 95% CI: 0.75 to 1.05).
- Apixaban, compared with rivaroxaban, showed reduced risks of ischemic stroke (HR 0.85; 95% CI: 0.74 to 0.99) and major bleeding (HR 0.61; 95% CI: 0.53 to 0.70).

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CIHR IRSC Canadian Institutes of Health Research / Instituts de recherche en santé du Canada

CNODES CANADIAN NETWORK FOR OBSERVATIONAL DRUG EFFECT STUDIES

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