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AF & HCM meta-analysis protocol

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Protocol status: Working
We use this protocol and it's working

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Abstract

Background: A systematic review and meta-analysis will be conducted to assess the efficacy and safety of direct oral anticoagulants (DOACs) versus vitamin K antagonists (VKAs) in patients with hypertrophic cardiomyopathy (HCM) and atrial fibrillation (AF).

Methods: Studies enrolling patients with HCM and AF will be included. Primary outcomes will include thromboembolic events, major bleeds, and all-cause mortality, while secondary outcomes will include intracranial hemorrhages and cardiovascular death.

Results: We will search OVID MEDLINE, Cochrane CENTRAL, and EMBASE up to April 2024. Data will be extracted and analysed using standard meta-analytic techniques.

Conclusion: Our findings will provide insights into the comparative effectiveness of DOACs and VKAs in patients with HCM and AF, aiding clinical decision-making in this population.

AF & HCM meta-analysis protocol

1 Identify the question using the PICO framework
Population - patients with concurrent AF and HCM (No constraints were set in terms of type of atrial fibrillation or type of DOAC or VKA the patient was given. Furthermore, there were no constraints in terms of type of hypertrophic cardiomyopathy or duration of the condition)
Intervention - DOACs
Comparison - Vitamin K antagonists
Outcomes - Rates of thromboembolic events, major bleeds, all-cause deaths, intracranial haemorrhages, and cardiovascular deaths

2 Search strategy
Databases to search include OVID MEDLINE, Cochrane CENTRAL and EMBASE, from inception to April 2024.
Search terms included atrial fibrillation, hypertrophic cardiomyopathy, warfarin, anticoagulation, Vitamin K antagonist, and direct oral anticoagulant, and includeMeSH terms, and keywords.
Two reviewers will independently screen for titles for relevance and then assessed the full texts for their eligibility.
A third expert will intervene whenever discrepancies are observed.

3 Data extraction
The data will be extracted onto a pre-made excel spreadsheet (Office 365, Microsoft Corporation) with subheadings for study type, single or multi-centre, study drugs, and population characteristics: age, sex, hypertension, diabetes, heart failure, left atrium (LA) size, left ventricular ejection fraction (LVEF), maximal wall thickness, left ventricular outflow tract (LVOT) gradient, and follow-up duration.

4 Data analysis
The data will be analysed using odds ratios as a measure of effect. A random-effects model will be used for accounting for the observed heterogeneity. Statistical analysed and creation of forest plots will be completed using meta packages in R programme and variance will be calculated using paule-mandel model.

5 Risk of bias Assessment
The studies included will be assessed by 2 independent authors and will use the Newcastle Ottawa scale.