Medication errors associated with non-vitamin K antagonist oral anticoagulants (NOACs) in adult patients

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Review question

1- What is the prevalence of medication errors associated with novel oral anticoagulants in adult patients?

2- What are the key factors associated with errors while using novel oral anticoagulants use in adult patients?

3- What are the nature and effectiveness of interventions to minimize and prevent medication errors associated with novel oral anticoagulants in adult patients?

Searches

Independent and duplicate data extraction will be undertaken. The results of all searches will be exported into a reference manager database using Endnote X9 software for double screening titles and abstracts then will remove duplicated studies and use the rest for referencing later. Any disagreement or uncertainties about study inclusion will be resolved by discussion and consensus of the reviewer and referred to a third reviewer if required for elucidation and clarify of information. The study selection will be a three stage process; reasons for exclusion will be documented at full text screening stage.

Stage 1: initial screening of titles all retrieved studies will be considered alongside inclusion and exclusion criteria. Studies which are clearly not relevant will be excluded, as those that initially considered relevant but will be excluded on the basis of inclusion and exclusion criteria. Where there are any doubts, studies will be included at this stage.

Stage 2: screening of abstracts retained studies will be accessed and their relevance assessed according to the inclusion and exclusion criteria. Where there are any doubts, studies will be included.

Stage 3: assessment of full text all studies retained at stage 2 above will be obtained and their relevance assessed according to the inclusion and exclusion criteria.

The search in databases will be run from 2008 to 2019.

A systemic search of literature will be undertaken in ten electronic database:MEDLINE, Embase
The Cochrane Central Register of Controlled Trials (CENTRAL), Cochrane Database of Systematic Reviews (CDSR)

Database of Abstracts of Reviews of Effects (DARE), Cumulative Index to Nursing and Allied Health Literature (CINAHL), The British Nursing Index (BNI), International Pharmaceutical Abstracts (IPA), Health Management Information Consortium (HMIC), Google Scholar.

Other web based searches :The national medication error reporting systems of JCAHO Sentinel Events Reporting System, Medication Errors Reporting Program (ISMP), USP MedMARx™ Program and the FDA MedWatch™ Program.

Types of study to be included

All study designs will be considered. These include:

• Randomised controlled trials,

• Non-randomised controlled studies,

• Before-and-after study,

• Interrupted time series,

• Cohort study,

• Case-control study

• Case series in relation to prevalence of medication errors and effectiveness of interventions to prevent or minimise errors,

• Qualitative studies- Including Narrative, phenomenology, grounded theory ethnography, case studies, and action research will be included in relation to the data around factors contributing to the errors, and preventing minimizing errors.

• Mixed methods design will aso be included.

• Intervention studies including RCTs, non-randomised controlled studies,

Condition or domain being studied
Medication errors associated with non-vitamin K antagonist oral anticoagulants (NOACs).

Participants/population
All adult patients ? 18years using any of NOACs

Intervention(s), exposure(s)
Non-vitamin K antagonist oral anticoagulants (NOACs).

Comparator(s)/control
Usual care (without that intervention) for intervention studies.

Context
All study settings will be considered.

Main outcome(s)
-Prevalence and number of medication errors

-Contributing factors
-Error rate
-Patient quality of life

-Hospitalisation rate

-Mortality

-Morbidity-

-Prevention measure

Additional outcome(s)
None.

Data extraction (selection and coding)

Electronic data extraction forms will be prepared based on the review questions and objectives and in consultation with research team members. The forms will be piloted before use. The fields will include: Study title and author/s, setting, study design, number of patients in each group, and outcome of significance to the review question and objectives. In addition, data on the use of theory and theoretical frameworks will be extracted.

The data extraction tools will be developed and summarised in tabulated format.

Risk of bias (quality) assessment
Risk of bias assessment (RCTs):

The Cochrane risk of bias assessment tool (2008) to assess the quality of randomised control trials (RCT) will be utilised. Risk of bias in all included studies will be assessed and reviewed by two independent reviewers and third reviewer will be consulted if consensus cannot reached. Each included studies will be assessed and evaluated according to the following criteria: Sequence generation, allocation concealment, blinding of participants and personnel used throughout the study, completeness of data, and selective outcome reporting and other source of bias
Quality assessment (non-RCT studies):

For the methodological quality of non-RCTs, Newcastle-Ottawa Scale (NOS) that was developed and validated mainly for observational studies will be used for non-RCT studies. The NOS evaluates three quality parameters (selection, comparability, and outcome) divided across eight specific items.

Another alternative tool used for to assess the quality of cohort is the GRACE checklist. This tool can adequately assess the comparative effectiveness investigated in comparative studies. Also the checklist provides a good assessment of the scientific methods used by a study as well as an assessment on the quality of data used in a study. Therefore, this review will utilise this tool for studies with comparative groups.

Strategy for data synthesis
Analysis depends on the data available but involves a form of narrative synthesis so as to deduce and concisely explain the findings of studies included in this review. First, a descriptive summary of studies will be presented in table form supported by a narrative description of the findings in each included study. The tables will include details of study type, setting, and numbers of participants, outcomes of interest, findings and an indication of study quality to assess the integrity of the result will be produced.

Meta-analysis of quantitative data will be considered where relevant. This will apply to data in relation to prevalence and interventions studies.

Analysis of subgroups or subsets
None.

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22 January 2019

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22 June 2019

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Conflicts of interest

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English

Country
England

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Review_Ongoing

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Subject indexing assigned by CRD

Subject index terms
Anticoagulants; Humans; Medication Errors

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Details of any existing review of the same topic by the same authors

Stage of review at time of this submission

Stage	Started	Completed
Preliminary searches	Yes	No
Piloting of the study selection process	No	No
Formal screening of search results against eligibility criteria	No	No
Data extraction	No	No
Risk of bias (quality) assessment	No	No
Data analysis	No	No

Versions
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