Protocol Brief

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Comparative effectiveness of influenza vaccines in adults 65 years of age and older: a systematic review and network meta-analysis

Rationale

A number of influenza vaccines are available for adults 65 years of age and older. While they have been studied individually to determine their safety and effectiveness, this review aims to compare vaccines to one another to determine differences in effectiveness between them. Findings from the review will be used by the Public Health Agency of Canada and other relevant Drug Safety and Effectiveness Network policy-makers.

Implications

People aged 65 years and over comprise one of the groups most vulnerable to both seasonal and pandemic Influenza, and it can result in high morbidity, mortality and health care costs. This synthesis of comparative evidence on the safety and effectiveness of currently available influenza vaccines for older adults to identify the potentially safest and most effective vaccines will enable policy makers and health care providers to make evidence based and cost- effective public health decisions.

PROSPERO registration number:
CRD42020177357

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Background

- Influenza vaccines are effective in reducing the disease burden. Although there are a number of vaccines available for older adults it is unknown which vaccine is the most effective in this population.

Objective

- Determine the comparative effectiveness of various influenza vaccines available for adults 65 years of age and older and the extent to which effectiveness varies by risk group and vaccine characteristics.

Methodology

- A systematic review and network meta-analysis (NMA) will be conducted, following the methods in the Cochrane Handbook of Systematic reviews.
- **Eligibility Criteria**:
  Population: All adults aged 65 years and older.
  Interventions: Any influenza vaccine for adults 65 years of age and older.
  Comparators: Any other available influenza vaccine, no influenza vaccine, placebo or any other vaccine.
  Outcomes: Vaccine effectiveness against influenza, [primary outcome], hospitalisation (all causes), mortality, and adverse vascular events.
  Study designs: Randomised controlled trials (RCTs), case test-negative studies, non-randomised studies, and observational studies
- **Literature Search:** Executed in MEDLINE, EMBASE, PsycINFO, JBI and the Cochrane Library. Grey literature will be searched using the Canadian Agency for Drugs and Technologies in Health guide. Study registries (e.g., clinicaltrials.gov, centerwatch.com, isrctn.com) will be searched.
- **Study Selection/Data Abstraction:** Screening, data abstraction and risk of bias assessment will be conducted independently by two reviewers with conflicts resolved by a third reviewer. Risk of bias in the included studies will be assessed using the Cochrane Risk of Bias tool for RCTS and the Risk of Bias in Non-randomised studies-of interventions (ROBINS-I). The NMA will be conducted by vaccine type for seasonal and pandemic influenza, separately. Sub-group analyses will compare adjuvanted versus unadjuvanted vaccines and high versus low dose vaccines.

Knowledge Translation Strategy

- Final results will be published in an open-access, peer-reviewed journal and be disseminated among relevant knowledge users and policy makers at the Public Health Agency of Canada and Drug Safety and Effectiveness Network.

Funded by Canadian Institutes of Health Research Drug Safety and Effectiveness Network

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