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Title

Exposure to high-priority drug-drug interactions among non-elderly adults in Québec: a cohort study

Priority 1 (Research Category)

Prescribing and pharmacotherapeutics

Presenters

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Abstract

Context: Prescribing is the most-used intervention in primary care, and most prescriptions are issued in primary care. Harmful prescription drug-drug interactions (DDI) arise when the effects of one drug change the effect of another drug and increase the risk for an adverse event, including therapeutic failure. While adverse events caused by DDI are estimated to be a leading cause of morbidity and mortality, this issue remains relatively understudied among the non-elderly adult population.

Objectives: 1) To measure the frequency of exposure to high-priority DDI among non-elderly community-dwelling non-elderly adults in Québec. 2) to measure the association between exposure to 4 high-priority DDI and the risk of an adverse event. Study Design and Analysis: 1) We used a retrospective cohort study design to identify high-priority DDI among periods of overlapping drug exposures. DDI exposures were considered incident if the individual was not exposed to a DDI in the year preceding cohort entry. 2) Cox proportional hazards with time-varying drug exposures were used to measure the association between exposure to a DDI and the hazard of an adverse event. Defined daily doses were used to measure the dose-dependent multiplicative interaction on the hazard of an adverse event.

Dataset: Quebec administrative health databases containing de-identified prescription drug claims, ER visits, hospitalizations, and medical acts held by the National Institute for Excellence in Health and Social Services (INESSS) were used. Population: a 5% random sample of adult (19-64y) Quebec residents covered by the public drug insurance in 2014-2017 was used. Outcome measures: 1) yearly prevalence and incidence of exposure to at least one high-priority DDI. 2) Hazard ratio for an adverse event (emergency room visit, hospitalization, or death).

Results: 1) 11.7% (95% CI: 11.5-12.0) or 7,498/63,834 individuals in the cohort were exposed to at least one high-priority DDI over 12 months in 2015-2016. 2) Exposure to three common high-priority DDI demonstrated evidence of a dose-dependent multiplicative interaction on the hazard ratio for an

adverse event. Conclusions: One in 8.5 adults with coverage by the public drug insurance of Quebec were exposed to at least one high-priority DDI over 12 months. Primary care clinicians must consider DDI as a source of morbidity and mortality among the population of community-dwelling non-elderly adults.

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