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Title

Understanding the impact of COVID-10 on Antibiotic User in Canada through the use of Electronic Medical Records

Priority 1 (Research Category)

Prescribing and pharmacotherapeutics

Presenters

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Abstract

Context: The COVID-19 pandemic is expected to have a dramatic change in the diagnosis and subsequent antibiotic treatment of respiratory symptoms. Objective: Compare healthcare utilization (interactions, prescriptions) between COVID-19 positive patients and patients with a) Influenza (Flu); b) Respiratory Tract Infection (RTI); and c) COVID-19 negative. Study Design and Analysis: A matched-pair cohort study design was used. Three cohorts were created by matching exposed patients (COVID-19 positive) with three groups of unexposed patients (those with Flu, RTI and COVID-19 negative). Each exposed patient was matched on age, sex, province, and month of visit. Logistic regression modeling was conducted. Dataset: Canadian Primary Care Sentinel Surveillance Network electronic medical record data from sites in British Columbia, Alberta, Manitoba, Ontario, Quebec, Nova Scotia and Newfoundland. Population Studied: Patients that met the case definition criteria for: COVID-19 (April and December 2020), Flu (October 2017 and December 2020), RTI (April and December 2020) or COVID-19 negative (April and December 2020). Outcome measures: Five outcomes were evaluated at four follow-up intervals (30-, 60-, 90- and 180-days of index event): i) antibiotic prescription; ii) non-antibiotic prescriptions; iii) all cause visits; iv) follow-up visits; and v) visits with a bacterial diagnosis. Results: There were a total of 3,073 COVID-19 patients identified in the CPCSSN database during the study period (April to December 2020) that were matched to patients in the three unexposed groups. The three cohorts were more female (58%), and had younger and middle-aged adults (29.4% and 38.9%, respectively) than children and older adults. Most patients lived in Alberta, Ontario, or British Columbia. There were significantly more urban patients with COVID-19 than with Flu, RTI or non-COVID. Patients with COVID-19 were significantly less likely to receive an antibiotic prescription than patients with flu (OR=0.20, 95% CI (0.14, 0.29)), RTI (OR=0.08, 95% CI (0.06, 0.12)) or patients without COVID-19 (OR=0.64, 95% CI (0.44, 0.94)). Patients with COVID-19 were significantly more likely to have at least one visit within 30 days of their index event, compared to patients with RTI (OR=2.23, 95% CI (1.98, 2.51)) or patients without COVID-19 (OR=3.87, 95% CI (3.39, 4.41)). Conclusions: Primary care data are a valuable resource to further understand the epidemiology of COVID-19.