

# The Epidemiology of Giant Cell Arteritis in Ontario

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There is a paucity of data on the incidence and prevalence of giant cell arteritis (GCA) in Canada. Additionally, there have been conflicting reports on the risk of mortality among individuals with GCA.

We first carried out a health administrative data validation study to evaluate the accuracy of administrative data algorithms for ascertaining GCA patients in population-based data. Our top performing algorithm (81% positive predictive value [PPV], 60% sensitivity, 100% specificity, 99% negative predictive value [NPV]) defined GCA patients who had at least one hospitalization, or at least two diagnosis claims (with at least one diagnosis claim by a rheumatologist, internist, or ophthalmologist) and at least one glucocorticoid prescription or at least one fee code for temporal artery biopsy in a three-year period, and excluding those with fee codes for kidney, lung, skin, and nasal biopsies (associated with other forms of vasculitis).

Application of this algorithm to Ontario province-wide data identified the crude number of incident GCA patients to be 861 patients (0.03%) in 2000 and 1,662 patients (0.03%) in 2018 among residents 50 years and older. We observed the age- and sex-standardized incidence of GCA to be stable over time (around 25 new cases per 100,000 people annually over the age of 50 years). Age-standardized incidence rates were significantly higher among females than males. Trends in age-standardized incidence rates showed stable incidence among females, but an increase

in incidence among males over time. Incidence rates were highest among those aged 70 years and older. The cumulative number of GCA patients increased from 4,306 patients in 2000 to 13,832 patients in 2018. Standardized prevalence rates increased from 125 (95% CI 121,129) to 235 (95% CI 231,239) cases per 100,000 people 50 years and older during the same time period.

Over a 19-year period, mortality has remained increased among GCA patients relative to the general population. GCA mortality rates were higher among males and more premature deaths were occurring in younger age groups. In our study, improvements to the relative excess mortality for GCA patients over time (mortality gap) also did not occur.

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