

The Association of Sibling Fracture History with Major Osteoporotic Fractures in Individuals from A Population-Based Cohort

Hamad, AF^{1*}, Yan, L¹, Leslie, WD¹, Morin, SN², Yang, S³, Walld, R¹, Roos, LL¹, and Lix, LM¹¹University of Manitoba²McGill University³Jilin University

Introduction

Despite recommendations, most studies examining health inequalities fail to report both absolute and relative summary measures. We examine colorectal cancer (CRC) survival for patients with and without severe psychiatric illness (SPI) to demonstrate the use and importance of relative and absolute effects.

Objectives and Approach

We conducted a retrospective cohort study of CRC patients diagnosed between 01/04/2007 and 31/12/2012, using linked administrative databases. SPI was defined as diagnoses of major depression, bipolar disorder, schizophrenia, and other psychotic illnesses six months to five years preceding cancer diagnosis and categorized as inpatient, outpatient or none. Associations between SPI history and risk of death were examined using Cox Proportional Hazards regression to obtain hazard ratios and Aalen's semi-parametric additive hazards regression to obtain absolute differences. Both models controlled for age, sex, primary tumour location, and rurality.

Results

The final cohort included 24,507 CRC patients, 482 patients had an outpatient SPI history and 258 patients had an inpatient SPI history. 58.1% of patients with inpatient SPI history died, and 47.1% of patients with outpatient SPI history died. Patients with an outpatient SPI history had a 40% (HR 1.40, 95% CI: 1.22-1.59) increased risk of death and patients with an inpatient SPI history had a 91% increased risk of death (HR 1.91, 95% CI: 1.63-2.25), relative to no history of a mental illness. An outpatient SPI history was associated with an additional 33 deaths per 1000 person years, and an inpatient SPI was associated with an additional 82 deaths per 1000 person years after controlling for confounders.

Conclusion

We demonstrated that reporting of both relative and absolute effects is possible and calculating risk difference is relatively simple using Aalen models. We encourage future studies examining inequalities with time-to-event data to use this method and report both relative and absolute effect measures.

*Corresponding Author:

Email Address: amani.hamad@umanitoba.ca (AF Hamad)