

CAN HEALTH RISK BEHAVIOURS EXPLAIN THE HIGH MORTALITY RATE FOR ADULTS WITH CHRONIC HEPATITIS C IN THE UNITED STATES?

Innes, H ¹; Mcauley A ²; Goldberg D ², Alavi M ³; Valerio H ¹; Hutchinson S ¹

¹Glasgow Caledonian University, School of Health and Life Sciences, ²Health Protection Scotland, Meridian Court, Cadogan Street, Glasgow G2 6QE, UK, ³The Kirby Institute, University of New South Wales, Sydney

Background: In resource-rich countries, persons with chronic hepatitis C (CHC) infection experience high mortality rates. Whether this is due more to: (a) the biological sequelae of CHC infection, or b) a high concomitant burden of health risk behaviours (HRBs), is unclear.

Methods: We utilised data from 1999-2011 participants of the US National-Health-and-Nutritional-Examination-Survey. We included adults tested for CHC infection and sourced data on subsequent mortality status. We determined the baseline prevalence of the five major HRBs – alcohol use; cigarette smoking, physical inactivity, poor diet, and illicit drug use – according to CHC following standardisation for demographic factors. We used Poisson regression to determine the mortality rate ratio (MRR) for individuals with CHC relative to individuals without. We then calculated the attenuation in this ratio following adjustment for HRBs.

Results: This analysis included 33,645 survey participants (of whom 452 tested positive for CHC). There were marked differences in the prevalence of each HRB according to CHC status. Particularly for: consuming ≥ 5 alcoholic drinks/day (11.1% for CHC-infected vs. 1.4% for CHC uninfected; $p < 0.001$); cigarette smoking (62.6% for CHC-infected vs. 23.0% for CHC uninfected; $p < 0.001$); and recent injecting-drug-use (7.9% for CHC-infected vs. 0.2% for CHC uninfected; $p < 0.001$). CHC was associated with a 2.5-fold higher mortality rate after adjustment for demographic factors (MRR:2.54;95%CI:1.83-3.52). Subsequent adjustment for all five HRBs attenuated this ratio by 48.1% to MRR:1.80(95%CI:1.27-2.56). Comparable levels of attenuation (53.0%) were observed in a subgroup analysis of individuals aged 45-70yrs.

Conclusion: In the US, an appreciable portion of excess mortality in persons with CHC may be due to HRBs rather than CHC. This is equally true of infected individuals aged 45-70yrs (i.e. the “baby boomer” demographic targeted by birth-cohort screening). This stresses the importance of a public health response that encompasses not only improved access to antiviral therapy, but action on HRBs too.