

The Epidemiology and Natural History of Chronic Hepatitis B in the Canadian Province of Alberta from 2012 to 2021: A Population-based Study

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Background/aims: Canadian data on the epidemiology of chronic hepatitis B (CHB) are limited. Identifying the epidemiologic characteristics of CHB is critical to improving prevention policies and achieving the World Health Organization goal of viral hepatitis elimination. We aimed to identify the burden of CHB from a Canadian population-based perspective.

Methods: We searched Alberta Analytics administrative databases including the Alberta Provincial Laboratory database to describe the epidemiology and natural history of CHB in Alberta, Canada between fiscal years (FYs) 2012-2020.

Results: The age/sex-adjusted incidence of CHB between FYs 2015-2020 was 27.1/100,000 (29.6/100,000 in males and 24.5/100,000 in females). Although the adjusted incidence rate of CHB decreased from 36.4/100,000 in FY 2015 to 13.4/100,00 in FY 2020, the prevalence rate increased from 98.9/100,000 in FY 2015 to 210.3/100,000 in FY 2020. Among 6,860 incident cases with a follow-up of 23,130.4 person-years from diagnosis (median 3.6 years), 2.1% died, and 0.18% underwent liver transplantation. The estimated 5-year survival rate was 97.2%, and survival was significantly lower than that of the age/sex-matched Canadian population (standardized mortality ratio of 3.9 [95% CI 3.3-4.6]). Male sex (hazard ratio [HR] 1.69; 95% CI 1.19-2.40) and older age at diagnosis (HR per additional year, 1.08; 95% CI 1.07-1.09) were independent predictors of mortality.

Conclusions: We reported an overall decrease in the incidence of CHB in Albertan population, consistent with nationwide trends. Over a 5-year period, Alberta had higher rates compared to the national rates reported. Incidence and prevalence of CHB were higher among males and individuals aged 45-64 years. Survival of patients was significantly lower than that of the general population, which emphasize the importance of identifying and eliminating barriers to the optimal linkage to care across HBV care cascade. Our findings also provide an effective tool for planning age/sex-based strategies to progress toward HBV elimination.