

中文題目：感染 C 型肝炎病毒的男性和女性的全因和特定原因死亡風險

英文題目：All-cause and cause-specific mortality risk among men and women infected with hepatitis C virus

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Background

There are few long-term nationally representative studies on the risk of death among people with hepatitis C virus (HCV) infection. In addition, whether there are sex differences in mortality risk among HCV-infected individuals is relatively unknown. Accordingly, we conducted a population-based cohort study to elucidate the risk of all-cause and cause-specific mortality among men and women with HCV infection.

Method

The study population were adult participants of 1999-2018 National Health and Nutrition Examination Survey (NHANES). Individuals with HCV seropositivity or detectable HCV RNA were defined as having HCV infection. A total of 944 HCV-infected individuals and 4717 age-, sex-, and survey cycle-matched non-HCV infected counterparts were selected. The survival status was ascertained by linking NHANES data to death records from the National Death Index through probabilistic matching and death certificate review. The follow-up period for each participant is the period between the NHANES baseline examination date and the participant's death date or last date of follow-up (December 31, 2019), whichever came first.

Results

The average age of the study population was 51.7 ± 11.3 years old and 63.9% of them was men, with no differences in average age or sex distribution between case and comparison groups. We observed that individuals with HCV infection were higher in prevalence of comorbidities including hypertension, cardiovascular disease, and previous stroke. In addition, HCV-infected individuals tended to be smokers and single (never married, widowed, divorced, or separated), and lower in educational attainment and family income. There was no significant difference in prevalence of diabetes and body mass index (BMI) between the 2 groups.

During a median follow-up of 128.0 months (interquartile range: 70.0-188.0 months), a total of 686 participants died (10.1 per 10000 person-months), of whom 148 died from CVD, and 197 died from cancer. Our results showed that the increased risk of all-cause mortality is similar in men (HR: 2.31, 95% CI: 1.91-2.80) and women (HR: 2.73, 95% CI: 2.02-3.70) compared those with HCV infection to those without HCV infection (p for interaction > 0.05). In addition, we showed that men (HR: 2.18, 95% CI: 1.52-3.13) and women (HR: 2.90, 95% CI: 1.64-5.13) with HCV infection have similar increased risk of death from cancer compared with no HCV infection (p for interaction > 0.05). After adjusting for

age, race/ethnicity, BMI, diabetes, hypertension, CVD, previous stroke, smoking status, educational attainment, marital status, and family income, we showed that HCV-infected men (HR: 1.42, 95% CI: 1.13-1.78) and women (HR: 1.78, 95% CI: 1.24-2.55) are equally at increased risk of all-cause mortality compared with non-HCV infected men and women (p for interaction > 0.05). The cancer-related mortality risk is significantly increased in HCV infected women compared with non-HCV infected women (HR: 2.10, 95% CI 1.09-4.05), but the association between HCV infection and cancer-related mortality is not significant among men (HR: 1.31, 95% CI: 0.87-1.98). Among HCV infected individuals, our results showed that there was no difference in all-cause mortality risk between men and women after adjusting for age, race/ethnicity, BMI, fibrosis-4 (FIB-4) index, diabetes, hypertension, CVD, previous stroke, smoking status, educational attainment, marital status, and family income.

Conclusion

Men and women with HCV infection had similar increased risk of death compared with non-HCV infected counterparts. In addition, among HCV infected individuals, there was no difference in all-cause mortality risk between men and women. While women are usually associated with lower mortality risk in general population, our results suggested that HCV infection may have raised the risk of death more in women than in men.