Causes of Death among People with Hepatitis C in NYC, 2000-2011

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Background

- An estimated 3.4 to 4.9 million people are living with chronic hepatitis C virus (HCV) infection in the US.¹ New York City (NYC) is one of the most heavily impacted areas in the country with about 146,500 chronic hepatitis C (HCV) infections.²
- HCV is strongly associated with excess mortality due to viral hepatitis, liver cancer, and cirrhosis.³ The number of hepatitis C virus (HCV)-related deaths is projected to rise in NYC and nationally.⁴

In 2010, the NYC DOHMH implemented CDC’s Program Collaboration and Service Integration (PCSI) initiative to increase collaboration and data sharing among infectious disease programs and to increase the delivery of integrated services to the public. This analysis describes the results of matching NYC DOHMH HCV surveillance data to the HIV surveillance data, and to NYC DOHMH vital statistics death data.

Objectives

- To identify causes of death in people with HCV and people with HCV/HIV co-infection
- To quantify the risk of death from various causes for people with HCV mono-infection and HCV/HIV co-infection

Methods

- A retrospective, deterministic, cross-match of the HIV, STD, tuberculosis (TB), chronic hepatitis B and C databases, and vital statistics deaths was conducted.³ This analysis included HVC, HIV, and death data.
- Premature mortality was defined as deaths occurring before the age of 65.
- Age-adjusted death rates for those with HCV, stratified by cause of death, as defined by ICD-10 codes, were calculated.
- Age at death, and the proportion that died prematurely were calculated.
- Analyses were conducted using SAS 9.2 (Cary, NC).

Results

Figure 1: Premature death (>65 years) and median age at death among all deaths, NYC, 2000-2011

Table 1: Causes of death among adults with HCV and HCV/HIV co-infection in comparison to New York City adult deaths without report of either disease, 2000-2011, NYC

Table 2: Associations* between cause-specific deaths and infection status in NYC, 2000-2011

![Image]

- Over half (53%) of deaths among the HCV/HIV co-infected are due to HIV/AIDS (Table 1).
- Persons with HCV mono-infection are at increased risk of dying from liver cancer, cirrhosis and drug-related causes compared to New Yorkers without HCV or HIV (Table 2).
- Those who are HCV/HIV co-infected are at increased risk of dying of liver cancer and drug-related causes compared to New Yorkers without HCV or HIV (Table 2).
- HIV/AIDS related causes of death peak in the 36-45 year old age group (Figure 2).
- Over half of deaths in the youngest age group were due to drug-related causes (Figure 2).

Conclusions

- Matching infectious disease surveillance data with vital statistics data is important to better understand mortality among HCV mono-infected and HCV/HIV co-infected persons and may be replicable by other health departments.
- Limitations:
  - Persons undiagnosed and, therefore, unreported with HIV or HCV were classified as having neither disease.
  - Deaths include only those that occurred in NYC.
- The large proportion of premature deaths among people with HCV indicates a need to identify HCV-infected persons earlier and link them to comprehensive care and treatment services.
- Though most deaths among the HCV mono-infected were unrelated to HCV, liver-related causes are responsible for about one quarter of deaths (24.8%).
- Interventions such as overdose prevention and drug treatment, including buprenorphine prescription can potentially prevent the 8% of deaths that were drug-related.
- The findings from this analysis will inform NYC DOHMH activities working with community providers to improve testing and treatment for HCV and improve outcomes for both HCV mono-infected and HCV/HIV co-infected persons.

References

5. New York City Department of Health and Mental Hygiene, Division of Disease Control, PCSI Syndemic Project, 2012.

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