Morbidity and mortality associated with viral hepatitis in Victoria

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Introduction

- There are approximately 100,000 people living with viral hepatitis in Victoria \(^1\)
- Impact of viral hepatitis infection in Australia is not currently available for all jurisdictions
- Liver cancer prevention: linking viral hepatitis diagnosis, treatment, and outcomes
  - What is the burden of disease attributable to hepatitis B and C in Victoria?
  - What are the predictors and outcomes of engagement with health care for Victorians living with hepatitis B and C?
  - How does engagement in care for hepatitis B and C impact on these adverse outcomes, and is the impact different for some population groups?

\(^1\) MacLachlan, 2018
Liver cancer prevention linkage study

What is the burden of disease attributable to hepatitis B and C in Victoria?

Datasets

- Viral hepatitis disease notifications
  - All deidentified records of hepatitis B and/or C notification in Victoria between 1991 and 2016
    - approximately 114,000 individual records

- ED presentations & hospital admissions - Victorian hospital datasets

- Cancer diagnosis - Victorian cancer registry

- Deaths - National Death Index

- Episodes of care and medications prescribed - MBS/PBS
Linkage

Data custodians
- CCV: Vic Cancer Registry
- Vic DHHS: VAED, VEMD
- AIHW: National Death Index
- Commonwealth Dept of Health: PHS

Data linkage units
- CVDL
- DLU - AIHW

Researchers
- Epidemiology unit: VIDRL, PDI

Ethical oversight
- Melbourne Health HREC
- AIHW Ethics Committee

Secure online data exchange system

Identifying data
Service/clinical data
Linkage key/ID
### Demographics

#### Viral hepatitis notifications between 1991 and 2016 in Victoria

<table>
<thead>
<tr>
<th>Demographics</th>
<th>HBV</th>
<th>HCV</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Individuals with notifications</strong></td>
<td>43,646</td>
<td>72,063</td>
</tr>
<tr>
<td>1 notification</td>
<td>92%</td>
<td>90%</td>
</tr>
<tr>
<td>Number of notifications</td>
<td>1-4</td>
<td>1-6</td>
</tr>
<tr>
<td><strong>Indigenous ever</strong></td>
<td>0.6%</td>
<td>5%</td>
</tr>
<tr>
<td>50%+ records</td>
<td>0.3%</td>
<td>2.6%</td>
</tr>
<tr>
<td><strong>Female</strong></td>
<td>44%</td>
<td>36%</td>
</tr>
<tr>
<td>Age at notification</td>
<td>34.5yrs</td>
<td>34.7yrs</td>
</tr>
<tr>
<td>Age range</td>
<td>0-96.5yrs</td>
<td>0-100yrs</td>
</tr>
<tr>
<td><strong>Country of Birth</strong></td>
<td>20% Australia, 19% Vietnam, 7% China, 3% Greece</td>
<td>69% Australia, 6% Vietnam, 2% Italy, 2% England</td>
</tr>
</tbody>
</table>
Preliminary statistics, 1991-2016, Victoria

**HBV**
- HBV with HCC: 1.7%
- 73% now deceased
- 6.9% died from all causes

**HCV**
- HCV with HCC: 2.0%
- 78% now deceased
- 17.7% died from all causes
Trends over time HBV

Age-standardised mortality rates

Rate per 100,000 people

Year


all cause  HCC  liver-related
Trends over time HBV
Trends over time HCV

Age-standardised mortality rate for HCV

Year: 1991 to 2015

- All cause
- Liver-related
- HCC
Trends over time HCV

Age-standardised mortality rate for HCV

Rate per 100,000 people

Year


all cause liver-related HCC
Late diagnosis of viral hepatitis

Late diagnosis of HBV (<=2 years)

- All-cause mortality
  - <2005: 52%
  - >=2005: 17%

- Liver-related mortality
  - <2005: 39%
  - >=2005: 24%

- Hepatocellular carcinoma (HCC)
  - <2005: 36%
  - >=2005: 21%

Late diagnosis of HCV (<=2 years)

- All-cause mortality
  - <2005: 56%
  - >=2005: 13%

- Liver-related mortality
  - <2005: 32%
  - >=2005: 11%

- HCC
  - <2005: 32%
  - >=2005: 11%
Summary and next steps

Summary
▪ Linkage takes a long time!
▪ HBV liver-related mortality rates stable, all cause mortality has continued to increase
▪ HCV liver-related mortality rates gradually increasing as has all cause mortality
▪ Late diagnosis has improved, but a long way to go yet

Next steps
▪ Awaiting linked national datasets from AIHW – MBS/PBS
▪ Explore engagement in care
▪ Identify priority populations
▪ Further inform cascade of care and mathematical model
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People living with viral hepatitis

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Department of Health and Human Services, Vic

Data Integration Services Centre
Australian Institute of Health and Welfare

WHO Collaborating Centre for Viral Hepatitis Epidemiology and Public Health Research Advisory Group
National best practice guidelines
for data linkage activities relating to
Aboriginal and Torres Strait Islander people

2012