Co-morbidities and co-medications of patients with chronic hepatitis C under specialist care in the UK

*Challenges for up scaling treatment?*

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Dr Alex Walker
Professor William Irving
Disclosures

• William Irving has participated in advisory committees or review panels for Novartis, MSD, Janssen Cilag and Bristol Myers Squibb; received grant/research support from GSK, Pfizer, Janssen Cilag, Gilead Sciences; and received speaking and teaching fees from Janssen Cilag and Roche

• Ben Hudson and Alex J. Walker have nothing to disclose

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Deaths from ESLD* or HCC in those with hepatitis C mentioned on the death certificate in the UK: 1996-2012

* Defined by codes or text entries for ascites, bleeding oesophageal varices, hepato-renal syndrome, hepatic encephalopathy or hepatic failure.

Data source: Office for National Statistics (England & Wales), Health Protection Scotland, in association with the Information Services Division, Northern Ireland Statistics and Research Agency.
SVR12 by Genotype and Regime – English Early Access/Compassionate use programme

Schematic UK HCV Population flow

50% diagnosed

10% decline therapy

12% Treated (5000 in 2012) 3% of infected “prevalent” pool

50% undiagnosed

21% defer therapy

Long term ex IDU
- In primary care
- Not symptomatic
- Unaware of risk

UK HCV POPULATION (90% likely IDU acquired)

CHC disease modelling in the UK

Projected impact of improving diagnostic and treatment rates by 140% and 115% respectively

Projected cases/year at current rates of diagnosis and treatment

Projected cases/year with:
- 140% increase in diagnosis
- 115% increase in treatment

Cramp et al. BMC Gastroenterology 2014, 14:137
CHC in the UK

• Reducing CHC related morbidity and mortality and reducing population prevalence depends on designing services which are accessible to the CHC population

• Little known about prevalence of adverse lifestyle factors, co-morbidities and co-medications in the UK CHC population

• No national dataset to ascertain total number in care
Aims and Objectives

For patients with chronic hepatitis C infection under specialist care in the UK:

• Describe:
  • demographics
  • lifestyle factors
  • comorbidities
  • co-medications

• Analyse population differences between key sub-groups:
  • Route of acquisition (specifically IDU vs non-IDU)
  • Age
  • Stage of liver disease at enrolment
Patients and Methods

• Overall HCV Research UK cohort - >10,000 patient
• Retrospective analysis of patient data from 59 UK Specialist centres
• Inclusion criteria for this study:
  • Enrolled in HCV UK between March 2012 – October 2014
  • Age >18
  • Viraemia at enrolment
  • Not receiving treatment at time of enrolment
• Patients categorised by:
  • Route of acquisition
    • IDU
      • Recent – Injected within last 6 months or on opioid substitution therapy
      • Previous – Acquired by IDU but no longer using or requiring opioid substitution
      • Non – All other routes of infection
  • Age
  • Stage of liver disease
Data fields analysed

• Route of acquisition
• Genotype
• Liver disease status at enrolment
• Lifestyle factors
• Co-morbidities
• Co-medications
Patient demographics - Age

No. of patients

Age Group

Overall (n = 6,278)  Male (n = 4,424)  Female (n = 1,829)

18-29  30-39  40-49  50-59  60-69  ≥70
## Patient demographics

<table>
<thead>
<tr>
<th></th>
<th>N = 6,278</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Male</td>
<td>70.5%</td>
</tr>
<tr>
<td>Median age, years (IQR)</td>
<td>52 (43 - 59)</td>
</tr>
<tr>
<td>Patients ≥60 years</td>
<td>23.4%</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
</tr>
<tr>
<td>% White</td>
<td>84.7%</td>
</tr>
<tr>
<td>% Asian</td>
<td>8.7%</td>
</tr>
<tr>
<td>% Other</td>
<td>6.6%</td>
</tr>
</tbody>
</table>
Liver disease at enrolment

• Genotype (GT) 1 (50%), GT 3 (33.7%)
• Overall prevalence of cirrhosis at enrolment was 23.6%
• Presence of cirrhosis correlated with increasing age
• 325 patients (5.17%) had received a liver transplant at time of enrolment
Route of acquisition (%)

- Current IDU
- Previous IDU
- Non-IDU

**IDU (N = 3714)**
- Current IDU: 23.2%
- Non-IDU: 35.9%

**Blood Products (N = 712)**
- Current IDU: 11.3%

**Born Abroad, Perinatal, HCV+ Partner (N = 781)**
- Current IDU: 12.4%

**Unknown, Other (N = 963)**
- Current IDU: 15.3%

**Data Incomplete (N = 108)**
- Current IDU: 1.7%
Lifestyle

- **Recent IDU**
- **Previous IDU**
- **Non IDU**

### Current Alcohol
- Recent IDU: 40.7%
- Previous IDU: 45.9%
- Non IDU: 34.3%

### History of High Alcohol
- Recent IDU: 47.7%
- Previous IDU: 51.6%
- Non IDU: 20.2%

### Current Smoking
- Recent IDU: 87.9%
- Previous IDU: 60.1%
- Non IDU: 30.2%

### Current Cannabis Use
- Recent IDU: 45.7%
- Previous IDU: 28.4%
- Non IDU: 9.1%
Psychiatric co-morbidities

**PREVALENCE OF DEPRESSION (%)**

- **Mild depression**
  - Recent IDU: 33.1%
  - Previous IDU: 28.3%
  - Non IDU: 20%

- **Severe depression**
  - Recent IDU: 34.9%
  - Previous IDU: 22.3%
  - Non IDU: 7.7%

**ODDS RATIO FOR DEPRESSION (95% CONFIDENCE INTERVALS)**

- **Recent IDU**: 34 (3.0, 3.9)
- **Previous IDU**: 2.3 (2.0, 2.6)
- **Non IDU**: 1 (0.5, 1.7)
# Physical co-morbidities

<table>
<thead>
<tr>
<th></th>
<th>Non-IDU n = 2456</th>
<th>Previous IDU n = 2256</th>
<th>Current IDU n = 1458</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>Age-adj. OR (95% CI)</td>
</tr>
<tr>
<td>Diabetes</td>
<td>17.8</td>
<td>9.2</td>
<td>0.6 (0.5, 0.7)</td>
</tr>
<tr>
<td>Malignancy</td>
<td>6.7</td>
<td>5.23</td>
<td>0.9 (0.7, 1.1)</td>
</tr>
<tr>
<td>HIV</td>
<td>5.5</td>
<td>4.8</td>
<td>0.8 (0.6, 1.1)</td>
</tr>
<tr>
<td>Renal failure</td>
<td>2.4</td>
<td>0.7</td>
<td>0.3 (0.2, 0.5)</td>
</tr>
</tbody>
</table>
Age and co-morbidity

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Prevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18–29 years</td>
<td>43.0</td>
</tr>
<tr>
<td>30–39 years</td>
<td>47.4</td>
</tr>
<tr>
<td>40–49 years</td>
<td>53.8</td>
</tr>
<tr>
<td>50–59 years</td>
<td>47.2</td>
</tr>
<tr>
<td>60–69 years</td>
<td>37.1</td>
</tr>
<tr>
<td>≥70 years</td>
<td>29.3</td>
</tr>
</tbody>
</table>

- History of depression (mild to severe)
- Diabetes
- Malignancy (including HCC)
- HIV
- Renal failure
<table>
<thead>
<tr>
<th>Medications</th>
<th>Non-IDU (ref) n = 2456</th>
<th>Previous IDU n = 2256</th>
<th>Current IDU n = 1458</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n (%)</td>
<td>n (%)</td>
<td>Age-adj. OR (95% CI)</td>
</tr>
<tr>
<td>Psychotropics*</td>
<td>420 (17.1)</td>
<td>635 (28.1)</td>
<td>1.9 (1.6, 2.2)</td>
</tr>
<tr>
<td>Antidiabetics</td>
<td>375 (15.3)</td>
<td>157 (7.0)</td>
<td>0.5 (0.4, 0.6)</td>
</tr>
<tr>
<td>Immunosuppressants</td>
<td>217 (8.8)</td>
<td>136 (6.0)</td>
<td>0.8 (0.6, 1.0)</td>
</tr>
<tr>
<td>Antiretrovirals</td>
<td>130 (5.4)</td>
<td>110 (4.9)</td>
<td>0.9 (0.7, 1.1)</td>
</tr>
<tr>
<td>Statins</td>
<td>165 (6.7)</td>
<td>96 (4.3)</td>
<td>0.9 (0.7, 1.2)</td>
</tr>
</tbody>
</table>
Age and co-medication

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Prevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18–29 years</td>
<td>45.0</td>
</tr>
<tr>
<td>30–39 years</td>
<td>60.0</td>
</tr>
<tr>
<td>40–49 years</td>
<td>65.0</td>
</tr>
<tr>
<td>50–59 years</td>
<td>70.0</td>
</tr>
<tr>
<td>60–69 years</td>
<td>75.0</td>
</tr>
<tr>
<td>≥70 years</td>
<td>80.0</td>
</tr>
</tbody>
</table>

- Psychotropics
- Antidiabetics
- Immunosuppressants
- Antiretrovirals
- Statins
Conclusions

- First UK study describing CHC population under secondary care
- Relatively low proportion of patients acquiring virus by IDU enrolled in specialist care
- The age of the cohort under specialist care is likely to increase
- Sharp increases in liver disease severity, co-morbidities and co-medications with increasing age.
- High prevalence of psychiatric co-morbidities and adverse lifestyle factors, especially amongst the IDU group
- HCV treatment selection needs to consider comorbidities and medications with DDI potential