Fall in HCV incidence in HIV+ MSM in London following expansion of access to DAA therapy

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Background

- Transformation of hepatitis C (HCV) care with directly acting antivirals (DAAs), making effective and tolerable treatment possible
- WHO targets for elimination of HCV as a public health threat by 2030, including a 90% reduction in new HCV infections
- BHIVA - aims to cure HCV in 100% of HIV/HCV patients by 2021

Predicted impact of scaling up treatment in HIV+MSM
Aims and Setting

• Use real world experience to examine trends in incidence of acute HCV in HIV+ MSM between 2013-2018 (pre and post DAAs)
• 4 central London HIV clinics which provide care for over 7000 HIV+ MSM
HCV Treatment Access

2015: NHS England (NHSE) DAA programme; decompensated cirrhotics priority

2016-date: access for all HCV disease stages; priority if significant fibrosis; monthly allocations per region; long waiting lists in some areas

Exceptions to NHSE treatment remain:

• Acute HCV infection not permitted until >6-months viraemia
• 2nd course of DAAs not permitted for HCV reinfection

All 4 centres also research active during the study period:

2016-2018: acute HCV/HIV (including TARGET 3D, REACT) and chronic non-cirrhotic HCV/HIV clinical trials (including STOP HCV)
Aims and Setting

**Period of study:** July 2013- June 2018; data reported by 6-month interval

**Data collected:**
- Number of acute HCV episodes: first and subsequent (reinfections)
- Number of HIV+MSM under active FU (denominator)
- Type of HCV treatment selected
- Timing of treatment initiation relative to acute HCV diagnosis

**Definitions**¹⁻²:
- **Acute HCV:** positive HCV RNA test plus a negative anti-HCV test within 12 months; or positive HCV RNA test with an acute ALT rise and no other identifiable cause
- **Acute HCV reinfection:** positive HCV RNA test with prior confirmed spontaneous clearance, SVR following HCV treatment or with evidence of genotype switch

Results: July 2013 - June 2018

301 acute HCV infections
226 first infections and 75 re-infections
## Results: Parameters at time of HCV diagnosis

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Number (n)</th>
<th>Counts</th>
<th>Percentage (%)</th>
<th>Range</th>
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<tbody>
<tr>
<td>Number (n)</td>
<td>301</td>
<td></td>
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<tr>
<td>Age, median [IQR]</td>
<td>41 years</td>
<td>[34,48]</td>
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<tr>
<td>On ART at time of acute HCV episode, n (%)</td>
<td>271 (90%)</td>
<td>81% (2013) to 100% (2018)</td>
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<td>HIV RNA &lt;50 c/mL at time of acute HCV</td>
<td>262 (87%)</td>
<td>73% (2013) to 94% (2018)</td>
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### HCV genotype:
- **G1**: 79%
- **G4**: 12%
- **G3**: 6%
- **G2**: 0.5%
- Not known (n=8) includes spontaneous clearers (n=6) LTFU (n=2)
Results: Incidence Rate/1000 HIV+ MSM PYFU

Peak IR July-Dec 2015:
- All acute HCV 17/1000 [95%CI 12, 21]
- First acute HCV 13/1000 [95% CI 9, 17]
Results: Incidence Rate/1000 HIV+ MSM PYFU

Incidence rate of acute HCV /1000 HIV+ MSM PYFU

- All HCV infection
- First HCV infection

Quarter / Year

Q34 2013  Q12 2014  Q34 2014  Q12 2015  Q34 2015  Q12 2016  Q34 2016  Q12 2017  Q34 2017  Q12 2018

70% reduction
ALL infection

80% reduction
FIRST infection

80% reduction
ALL infection

70% reduction
FIRST infection

Incidence rate of acute HCV /1000 HIV+ MSM PYFU
Results: Reinfection proportion

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<tbody>
<tr>
<td>First infection (n)</td>
<td>25</td>
<td>21</td>
<td>28</td>
<td>17</td>
<td>44</td>
<td>29</td>
<td>31</td>
<td>14</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Reinfection (n)</td>
<td>12</td>
<td>7</td>
<td>4</td>
<td>5</td>
<td>12</td>
<td>12</td>
<td>8</td>
<td>1</td>
<td>6</td>
<td>8</td>
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% first infection

% re-infection
Results: Incidence and reinfection
Results: HCV Treatment pathway

Number of cases (n)

- not treated/LTFU
- generics
- PEG IFN RBV
- clinical trial (average 10m)
- DAAs NHSE (average 22m)
- spontaneous clearance (16%)
Results: HCV time to start treatment

Average time (months) between acute HCV diagnosis and starting HCV treatment (n=222)*

*Excluded spontaneous clearers (n=48), non-treated or LTFU by Q3 2018 (n=31)
Limitations

- Data collected retrospective and not part of a formal study process

- HIV+MSM in one city therefore findings may not be replicated in other settings
  - *HCV clinical trials available in all centres which may not be representative*

- HCV transmission dynamics in national/international networks and HCV in HIV-neg MSM on PreP in London not evaluated
Conclusions

• In this large London cohort of HIV+MSM, we have observed a sharp decline in new acute HCV diagnoses since peak in late 2015 with no change to screening practices

• Peak in 2015 likely to represent a fall-off in rates of IFN-based treatments as DAAs awaited; ‘warehousing effect’ which may have increased HCV transmission by longer duration of viraemia

• After this peak, observed fall in incidence of 70% overall and 80% first acute HCV infection
Conclusions

Decline in incidence coincides with:

- Wider prescribing of HCV therapies via NHSE DAA programme
- Reduction in time to treatment of acute HCV cases
  - largely driven by clinical trial availability
- Possible improvements in risk-reduction strategies (not captured)?
  - rates of syphilis, gonorrhoea and chlamydia increased over same time period
Conclusions

– Reduction in incidence falls short of WHO target to reduce by 90%
  This would require IR to fall to 1.7/1000 HIV+MSM PYFU

– Reinfection remains high and may be increasing:
  Highlighting ongoing need to promote and improve risk reduction strategy
  and design appropriate screening policies in HIV+ and HIV- MSM

Without expanding access of DAAs via NHSE (to include early months of
infection and reinfection), progress in reducing incidence may plateau and
the opportunity for HCV micro-elimination in HIV+ MSM may be lost
Contributors:

Patients and staff from HIV Clinics of Royal Free Hospital NHS Trust, Mortimer Market Clinic, Barts Health NHS Trust and Imperial College Healthcare NHS Trust in London

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