Characteristics of the epidemiology and temporal trends of late presenters in Europe

Joanne Reekie for the late presenters working group of COHERE in EuroCoord
COHERERE

- Collaboration of 33 cohorts
- Over 270,000 HIV-positive individuals are enrolled
- 35 European countries

Mission
To conduct epidemiological research on the prognosis and outcome of HIV-positive people from across Europe requiring a large sample size of patients which the contributing cohorts cannot answer individually.
Late presenter project aims

- To report the characteristics of persons presenting late
- To investigate temporal trends in the proportion of persons presenting late
- To characterise the proportion of persons presenting late across different regions of Europe
Inclusion criteria

- Adults (>16 years old)
- Presenting for care for the first time on or after 1/1/2000
- CD4 count available at or within 6 months of presentation
Definition

Late presentation
Persons presenting for care with a CD4 count below 350 cells/µL or presenting with an AIDS defining event, regardless of the CD4 count

Presentation with advanced HIV disease
Persons presenting for care with a CD4 count below 200 cells/µL or presenting with an AIDS defining event, regardless of the CD4 count

Results

- 87,262 individuals presented for care
- 46,733 (53.5%, 95%CI 53.2-53.9) late presentation
- 28,691 (32.9%, 95%CI 32.6-33.2) presentation with advanced disease
- 12,008 (14%) presented with AIDS
  - 2434 (20%) *Pneumocystis jirovecii* pneumonia (PCP)
  - 1752 (15%) Cytomegalovirus disease (CMV)
  - 1464 (12%) Oesophageal candidiasis
### Characteristics at presentation

<table>
<thead>
<tr>
<th></th>
<th>Individuals <strong>not</strong> presenting late</th>
<th>Individuals <strong>presenting</strong> late</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total presenting for care (N, % of total)</strong></td>
<td>40529 46.5</td>
<td>46733 53.5</td>
</tr>
<tr>
<td><strong>Year of presentation, month/year (median, IQR)</strong></td>
<td>8/05 12/02-12/07</td>
<td>1/05 8/02-8/07</td>
</tr>
<tr>
<td><strong>Mode of infection (N, %)</strong></td>
<td><strong>MSM</strong></td>
<td><strong>Heterosexual male</strong></td>
</tr>
<tr>
<td></td>
<td>18930 46.7</td>
<td>14617 31.3</td>
</tr>
<tr>
<td><strong>Male IDU</strong></td>
<td>1958 4.8</td>
<td>2664 5.7</td>
</tr>
<tr>
<td><strong>Female IDU</strong></td>
<td>772 1.9</td>
<td>801 1.7</td>
</tr>
<tr>
<td><strong>Other (male and female)</strong></td>
<td>4136 10.2</td>
<td>5710 12.2</td>
</tr>
<tr>
<td><strong>Age (Median, IQR)</strong></td>
<td>34 28-41</td>
<td>38 31-45</td>
</tr>
<tr>
<td><strong>Region of presentation (N, %)</strong></td>
<td><strong>South</strong></td>
<td><strong>West Central</strong></td>
</tr>
<tr>
<td></td>
<td>3409 8.4</td>
<td>4543 9.7</td>
</tr>
<tr>
<td><strong>East</strong></td>
<td>636 1.6</td>
<td>568 1.2</td>
</tr>
<tr>
<td><strong>Region of origin (N, %)</strong></td>
<td><strong>Europe</strong></td>
<td><strong>Africa</strong></td>
</tr>
<tr>
<td></td>
<td>15840 39.1</td>
<td>16770 35.9</td>
</tr>
<tr>
<td><strong>Unknown</strong></td>
<td>17963 44.3</td>
<td>18811 40.3</td>
</tr>
</tbody>
</table>

MSM: men who have sex with men, IDU: injection drug user

All p-values <0.0001
Total individuals presenting for care by European region of presentation

West Central: Austria, Belgium, France, Germany, Luxemburg, Switzerland
South: Argentina, Greece, Israel, Italy, Portugal, Spain
North: Denmark, Finland, Ireland, Netherlands, Norway, Sweden, UK
East: Belarus, Bosnia & Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Ukraine.
Percentage of individuals presenting late by year of presentation

- Late presenters: OR 0.96 per year, 95% CI 0.96-0.97
- Advanced HIV disease: OR 0.95 per year, 95% CI 0.95-0.96

Year of presentation:
- 2000: 55%
- 2001: 53%
- 2002: 51%
- 2003: 49%
- 2004: 47%
- 2005: 45%
- 2006: 43%
- 2007: 41%
- 2008: 39%
- 2009: 37%
- 2010: 35%

N presenting for care:
- 2000: 7707
- 2001: 7699
- 2002: 8378
- 2003: 8044
- 2004: 8947
- 2005: 9013
- 2006: 8493
- 2007: 8895
- 2008: 9337
- 2009: 7550
- 2010: 2879
Characteristics associated with late presentation

- Year of presentation
- Mode of infection
- Region of origin
- Region of presentation
- Age

**Year of presentation**
- Per year later

**Mode of infection**
- MSM
- Heterosexual male
- Heterosexual female
- Male IDU
- Female IDU
- Other

**Region of origin**
- Europe
- Africa
- Other
- Unknown

**Region of presentation**
- West Central
- South
- North
- East

**Age**
- Per 10 years older

*MSM*: men who have sex with men  
*IDU*: injection drug use

Odds ratio (95% confidence interval)
## Characteristics by year of presentation

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2005</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total presenting for care (N)</strong></td>
<td>7707</td>
<td>9013</td>
<td>7550</td>
</tr>
<tr>
<td><strong>Presenting late (N,% of total)</strong></td>
<td>4380 (57%)</td>
<td>4844 (54%)</td>
<td>3682 (49%)</td>
</tr>
<tr>
<td><strong>Presenting with advanced disease (N,% of total)</strong></td>
<td>2852 (37%)</td>
<td>2979 (33%)</td>
<td>2061 (27%)</td>
</tr>
<tr>
<td><strong>Mode of infection (N,% presenting late)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSM</td>
<td>1221 (52%)</td>
<td>1520 (44%)</td>
<td>1362 (40%)</td>
</tr>
<tr>
<td>Heterosexual male</td>
<td>1045 (69%)</td>
<td>1169 (66%)</td>
<td>816 (63%)</td>
</tr>
<tr>
<td>Heterosexual female</td>
<td>1085 (56%)</td>
<td>1305 (58%)</td>
<td>745 (56%)</td>
</tr>
<tr>
<td>Male IDU</td>
<td>424 (54%)</td>
<td>270 (61%)</td>
<td>119 (58%)</td>
</tr>
<tr>
<td>Female IDU</td>
<td>117 (46%)</td>
<td>72 (51%)</td>
<td>33 (52%)</td>
</tr>
<tr>
<td>Other (male and female)</td>
<td>488 (63%)</td>
<td>508 (56%)</td>
<td>607 (50%)</td>
</tr>
<tr>
<td><strong>Region of presentation (N,% presenting late)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South</td>
<td>367 (59%)</td>
<td>436 (56%)</td>
<td>415 (56%)</td>
</tr>
<tr>
<td>West Central</td>
<td>2371 (58%)</td>
<td>2309 (54%)</td>
<td>1460 (49%)</td>
</tr>
<tr>
<td>North</td>
<td>1607 (56%)</td>
<td>2000 (53%)</td>
<td>1807 (47%)</td>
</tr>
<tr>
<td>East</td>
<td>35 (44%)</td>
<td>99 (46%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td><strong>Region of origin (N,% presenting late)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Europe</td>
<td>1496 (54%)</td>
<td>1723 (52%)</td>
<td>1459 (47%)</td>
</tr>
<tr>
<td>Africa</td>
<td>691 (66%)</td>
<td>812 (67%)</td>
<td>567 (64%)</td>
</tr>
<tr>
<td>Other</td>
<td>236 (64%)</td>
<td>393 (58%)</td>
<td>296 (52%)</td>
</tr>
<tr>
<td>Unknown</td>
<td>1957 (56%)</td>
<td>1916 (51%)</td>
<td>1360 (46%)</td>
</tr>
</tbody>
</table>
Percentage of individuals presenting late by mode of infection

- **MSM**: men who have sex with men
- **IDU**: injection drug use

- **Heterosexual male**: aOR 0.95 per year 95%CI 0.94-0.95 p<.0001
- **Heterosexual female**: aOR 0.98 per year 95%CI 0.97-0.99 p<.0001
- **IDU male**: aOR 1.00 per year 95%CI 0.98-1.02 p=0.76
- **IDU female**: aOR 1.00 per year 95%CI 0.97-1.04 p=0.84
- **Other male**: aOR 0.95 per year 95%CI 0.93-0.96 p<.0001

MSM: men who have sex with men
IDU: injection drug use
Number presenting late by mode of infection

- **West Central:** Austria, Belgium, France, Germany, Luxemburg, Switzerland
- **South:** Argentina, Greece, Israel, Italy, Portugal, Spain
- **North:** Denmark, Finland, Ireland, Netherlands, Norway, Sweden, UK
- **East:** Belarus, Bosnia&Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Ukraine
Percentage of individuals presenting late by region of origin

- Europe: aOR 0.96 per year, 95% CI 0.96-0.97, p < .0001
- Africa: aOR 0.97 per year, 95% CI 0.96-0.99, p < .0001
- Other: aOR 0.97 per year, 95% CI 0.95-0.99, p < .003
- Unknown: aOR 0.96 per year, 95% CI 0.95-0.99, p < .0001

Graph showing the percentage of late presenters (%) by year of presentation for Europe, Africa, Other, and Unknown regions.
Percentage of individuals presenting late by age category

- 16-25: aOR 0.99 per year, 95%CI 0.97-1.00, p=0.08
- 26-35: aOR 0.97 per year, 95%CI 0.96-0.98, p<0.0001
- 36-45: aOR 0.96 per year, 95%CI 0.95-0.96, p<0.0001
- 46-55: aOR 0.96 per year, 95%CI 0.95-0.97, p<0.0001
- >55: aOR 0.96 per year, 95%CI 0.95-0.98, p<0.0001
Total ‘low risk’ individuals presenting for care

Low risk: MSM, originating from Europe, aged ≤35

- **West Central:** Austria, Belgium, France, Germany, Luxemburg, Switzerland
- **South:** Argentina, Greece, Israel, Italy, Portugal, Spain
- **North:** Denmark, Finland, Ireland, Netherlands, Norway, Sweden, UK
- **East:** Belarus, Bosnia&Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Ukraine
Limitations

- 87,262 (19%) excluded due to no CD4 counts
- Clinics enrolled in COHERE not necessarily representative of rest of Europe
- Limited data from East Europe (only one cohort)
Conclusions

- Over 50% of individuals with CD4 counts measured at presentation are presenting late for care across Europe.

- The proportion of individuals presenting late has decreased slightly over time.

- Individuals whose mode of infection was not MSM, originating from outside of Europe, presenting in South or North Europe, and who are older are more likely to present late.

- However, a substantial number of ‘low risk’ individuals continue to present late.
Acknowledgements

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Late Presenters Working group:
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- **Copenhagen RCC cohorts**: Jesper Grarup (Head), Jesper Kjaer, Maria Paulsen.

Steering committee:
- **Executive committee**: Ian Weller (Chair, University College London), Manuel Battegay (SHCS, MoCHIV), Jordi Casabona (PISCIS), Dominique Costagliola (FHDH), Antonella d’Arminio Montforte (ICONA), Frank de Wolf (ATHENA), Maria Prins (CASCADE), Jesper Grarup (Head, Copenhagen Regional Co-ordinating Center), Geneviève Chene (Head, Bordeaux Regional Co-ordinating Centre).
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