Concurrent infections in pregnancies to women living with HIV in the UK and Ireland

Helen Peters, Kate Francis, Claire Thorne

UCL GOS Institute of Child Health, London

www.ucl.ac.uk/nshpc

NHIVNA, Bristol 2017
Background

- Sexually-acquired and blood-borne coinfections are frequent among people living with HIV

- In pregnancy such coinfections may place women and their infants at increased risk for adverse outcomes including vertical/congenital infection

- These have implications for management during pregnancy and beyond
Background - screening guidelines

In the UK recommended that all pregnant women are screened for hepatitis B virus (HBV), and syphilis

BHIVA guidelines:

- All HIV-positive women (newly diagnosed or previously engaged in care) are additionally screened for HCV and genital infections
- Comprehensive guidelines: management of any coinfections found in HIV-positive women (amendments to treatment regimen, increased testing in other depts, MDT approach)
Aim

- To describe infant exposure to coinfections in pregnancy in HIV-diagnosed women in the UK and Ireland, together with infant outcomes
National Study of HIV in Pregnancy and Childhood

Comprehensive observational surveillance in UK and Ireland since 1990

Complementary reporting schemes

- Paediatric reports, clinics and BPSU orange card
- Obstetric reports, RCOG approved scheme

No interventions, no enrolment, surveillance only

Substantial feedback to clinicians and HIV networks maximises coverage and case ascertainment (>95%)
Methods

• Since 2008 the NSHPC has actively collected data on infections routinely screened for in HIV-positive pregnancies (HBV, HCV and syphilis) as well as other co-infections

• Additionally collects details on infant exposure to and/or confirmed congenital infection

Analysis: describe exposure to co-infections and outcomes in 7758 livebirths to HIV-diagnosed women 2010-16, reported by the end of 2016
Results

- Among infants born 2010-16, 10% (764/7758) were reported to be exposed to a maternal co-infection.

- Of these, 5% (38/764) were exposed to >1 concurrent infections. Most common were:
  - HBV/HCV (14/38)
  - HBV/syphilis (8/38)
Results

Prevalence of reported coinfections among pregnancies to women with HIV

<table>
<thead>
<tr>
<th>Infection</th>
<th>Prevalence</th>
<th>95% CIs</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBV</td>
<td>4.4%</td>
<td>(3.9%, 4.8%)</td>
</tr>
<tr>
<td>HCV</td>
<td>1.8%</td>
<td>(1.5%, 2.1%)</td>
</tr>
<tr>
<td>HSV</td>
<td>1.5%</td>
<td>(1.2%, 1.8%)</td>
</tr>
<tr>
<td>Syphilis</td>
<td>1.3%</td>
<td>(1.0%, 1.5%)</td>
</tr>
</tbody>
</table>

Most common (with 95% CIs)
## Results – maternal demographics

<table>
<thead>
<tr>
<th></th>
<th>Co-infected (n=764)</th>
<th>None (n=6994)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median age at EDD (95% CI)</td>
<td>33.4y (29.7, 36.9)</td>
<td>33.4y (29.6, 37.1)</td>
<td>&gt;0.5</td>
</tr>
<tr>
<td>HIV dx during pregnancy</td>
<td>154 (20%)</td>
<td>1126 (16%)</td>
<td>0.005</td>
</tr>
<tr>
<td>Region of birth</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UK/Ireland</td>
<td>111 (15%)</td>
<td>1013 (15%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Other Europe</td>
<td>100 (14%)</td>
<td>338 (5%)</td>
<td></td>
</tr>
<tr>
<td>Sub Saharan Africa</td>
<td>496 (67%)</td>
<td>4932 (74%)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>30 (4%)</td>
<td>428 (6%)</td>
<td></td>
</tr>
<tr>
<td>Ethnic origin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black African</td>
<td>499 (68%)</td>
<td>4923 (75%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>White</td>
<td>198 (27%)</td>
<td>1074 (16%)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>40 (5%)</td>
<td>585 (9%)</td>
<td></td>
</tr>
<tr>
<td>Mode of HIV acquisition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heterosexual</td>
<td>593 (87%)</td>
<td>6034 (97%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>IDU</td>
<td>68 (10%)</td>
<td>42 (&lt;1%)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>17 (3%)</td>
<td>155 (3%)</td>
<td></td>
</tr>
<tr>
<td>Previous livebirths</td>
<td>584 (76%)</td>
<td>5448 (78%)</td>
<td>0.36</td>
</tr>
</tbody>
</table>
Results – Hepatitis B

Factors associated with HBV coinfection:

• Older median age: 34yr vs 33yr ($p<0.03$)
• Born abroad: SSA 83% vs 72% ($p<0.001$)
• Non-white ethnicity: 88% vs 82% ($p<0.005$)

No difference in timing of diagnosis, mode of HIV acquisition and parity
Results – Hepatitis C

Factors associated with HCV coinfection:

• Younger median age: 32yr vs 33yr ($p=0.032$)
• Region of birth: Eastern Europe ($p<0.001$). EE accounted for 30% (44/148) of those with an HCV coinfection
• White ethnicity: 85% vs 16% ($p<0.001$)
• IDU: 47% vs 0.7% ($p<0.001$). 57% of IDU had HCV
• First pregnancy ($p=0.07$)

No difference in timing of diagnosis
Factors associated with syphilis coinfection:

- Older median age: 35yr vs 33yr ($p=0.09$)
- Diagnosis in current pregnancy: 26% vs 16% ($p<0.02$)
- Born abroad: SSA 89% vs 71% ($p<0.001$)
- Black African ethnicity: 91% vs 74% ($p<0.001$)

No difference in parity or mode of HIV acquisition
Results – Regional differences

London: Nearly two-fifths of HIV reports vs quarter of HCV and HBV coinfections
Ireland: only 8% of HIV reports vs 29% of HCV coinfections and 17% of syphilis and HCV coinfections

Overall HIV reports

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>London</td>
<td>37%</td>
</tr>
<tr>
<td>Midlands</td>
<td>23%</td>
</tr>
<tr>
<td>North England</td>
<td>15%</td>
</tr>
<tr>
<td>South England</td>
<td>12%</td>
</tr>
<tr>
<td>Ireland</td>
<td>8%</td>
</tr>
<tr>
<td>NI, Scotland, Wales</td>
<td>5%</td>
</tr>
</tbody>
</table>
Results – Infant outcomes

- Of the infants exposed to co-infections 15% were born preterm (<37wks) vs 10% in unexposed ($p<0.001$)

- A confirmed congenital infection was reported in 4% of infants: CMV (12), syphilis (4), HBV (4), HCV (3), HSV (3), other (3) with one child having >1 congenital infection

- Of infants where HIV infection status was known, 0.8% (5/624) were found to have HIV (1/5 had a congenital infection) vs 0.4% overall
Conclusions

• One in ten infants born to women living with HIV in the UK/Ireland are exposed to coinfections

• Findings underscore the need to:
  - follow recommendations for screening for sexually transmitted and blood-borne infections in pregnant women with HIV
  - allow for appropriate management of mother and infant and to prevent congenital infection and/or other adverse pregnancy outcomes
Acknowledgements

- All respondents to the NSHPC
- Royal College of Obstetricians and Gynaecologists
- British Paediatric Surveillance Unit

Funding:
- Public Health England, Infectious Diseases Screening Programme

NSHPC:
- Principal Investigator: Claire Thorne
- Current Team: Pat Tookey, Helen Peters, Kate Francis, Rebecca Sconza, Anna Horn, Icina Shakes
- Additional support: from departmental colleagues including Claire Townsend, Graziella Favarato, Mario Cortina-Borja, Heather Bailey

Any views expressed are those of the speaker and not necessarily those of the funders