Risk Factors and Outcomes of Sexually Transmitted HIV in Jamaican Children and Adolescents Aged 6 to 19 years

Celia DC Christie, MBBS, DM Peds, MPH, FAAP, FIDSA, FRCP(Edin)
Professor of Pediatrics and Infectious Diseases, UWI and UHWI, Mona, Kingston, Jamaica

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Collaborators and Institutions

- Kadine Orrigio\textsuperscript{1}
- Russell B. Pierre\textsuperscript{2,3}
- Diahann Gordon-Harrison\textsuperscript{4}
- Kaye Lewis-O’Connor\textsuperscript{1,5}
- Georgiana Gordon-Strachan\textsuperscript{6}

- Bustamante Hospital for Children\textsuperscript{1};
- University of the West Indies\textsuperscript{2}
- JaPPAAIDS\textsuperscript{3}
- Child Protection and Family Agency, Office of the Children’s Advocate and Child Development Agency\textsuperscript{4}
- Comprehensive Health Center\textsuperscript{5}
- Caribbean Institute for Health Research\textsuperscript{6}
  • All in Kingston, Jamaica
Background

• About 36.9 million people globally were living with HIV at the end of 2017
• About 1.8 million adolescents between the ages of 10 and 19 were living with HIV worldwide
• Adolescents account for about 5% of all people living with HIV and 16% of new adult HIV infections.
• Of the 1.8 million adolescents living with HIV, about 1.5 million (85 %) live in sub-Saharan Africa.

UNAIDS Gap report
Rationale

• There is a paucity of published peer-reviewed international studies on risk factors and outcomes in cohorts of children and youth living with sexually transmitted HIV infection

• Jamaica has achieved vertical HIV transmission rates of < 2% in 2014 and 2015 and children who acquired HIV by vertical transmission are now aging up into adolescence and adulthood
  – However, less data on our cohorts children and adolescents with sexually-acquired HIV

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Objectives

- Determine socio-demography of children and adolescents with sexually acquired HIV
- Describe behavior that may contribute to the acquisition and ongoing transmission of HIV
- Determine the clinico-pathologic manifestations of HIV in these patients and their outcomes.
- Advocate for patients by providing a summary of results to relevant stakeholders to assist in guiding national policy making
Methods

• Retrospective clinical epidemiological study on clients with sexually transmitted HIV/AIDS

• Enrolled and followed in two Pediatric Infectious Diseases Clinics at University Hospital of West Indies and Comprehensive Health Center, in Kingston, Jamaica
  – From August 2003 through December 2018
  – Ethics approval – UHWI & Jamaican Ministry of Health

• Management is multidisciplinary
  – Pediatricians (infectious Diseases, Adolescent), nurses, adherence counselors, psychologist, using modified WHO criteria for HIV treatment and care
  – Reported to National AIDS Program, Child Development Agency, Center for Investigation of Sexual Offences and Child Abuse
Results – Sex, Gender

• 79 persons were enrolled in the study
• 80% females and 20% males
  – With a 4:1 female to male predominance
  – This difference was statistically significant (P = 0.048)
• 88%(70) identified as heterosexual, 8%(6) bisexual and 4%(3) homosexual.
Age of Sexual Initiation

• “Sexual initiation”, or first sexual contact, occurring before 16 years, (which is the “legal age of consent” in Jamaica) was reported in
  – 60%, 47 (41 F: 6M = 7:1 F:M predominance)
  – 39%, 31 (F:M = 2:1 F:M predominance) reported sexual initiation after >16 years
  – Median age of sexual initiation was 13 years
  – Age range 5 – 19 years
Sexual Initiation

N=79

• 48% (38) reported "agreeing" to their first sexual contact
• 46% (36) said sexual initiation was “forced”
• 30% (23) were aged ≤14 years and
• 23% (18) reported their initiating sexual perpetrator/partner was >16 years
Comparisons

• Cases were the statistically compared by
  – Sexual initiation before legal age of consent (< 16 yrs) vs
  – Sexual initiation after the legal age of consent (> 16 years) P< 0.05
HIV Diagnosis

N = 78

• All cases of HIV diagnosis were preceded by sexual initiation

• Age at HIV diagnosis – median 15 years (50%)
  – 5-9 years – 2 (2.6%) \( p<0.01 \)
  – 10–14 years - 27 (35%)
  – 15–19 years – 49 (63%)
Education and Employment

N = 77

• 93% had secondary education
  – Significantly associated with early sexual initiation (P<0.03)
  – 50% failed high school completion
• 10% had tertiary education
• Among the employable
  – 23% were employed
  – 62% unemployed
  – 14% not applicable
N = 78

- 46% were living with a parent
- 17% were living with another relative
  - This was significant associated with early sexual initiation (P< 0.042)
- 14% lived in children’s home
- 22% had other living arrangements
Risky Behaviours for ongoing HIV transmission

- **Unprotected sex** (N= 53) – 74%
- **History of STI’s** (N=53) – 37%
  - Significantly more prevalent in those with sexual initiation > legal age of sexual consent (P=0.01)
- **Drug use** (N=76) – 37%
  - Alcohol, marijuana, tobacco
- **Tattoos** (N=52) – 37%
- **Transactional sex** (N=53) – 14%
- **Body piercings** (N=48) – 50%
- **History of incarceration** (3) – 6%
  - Only occurred in those with sexual initiation below the age of consent
CDC Clinical Category of HIV Disease

N = 77

• Category A (mild) – 77%
• Category B (moderate) – 7%
• Category C (Severe) Full blown AIDS – 17%
Current HIV Therapy

N=75

- 1st line Anti-Retroviral Therapy (ART) – 75%
- 2nd line ART’s – 3%
- 3rd line ART’s – 4%
- None – 19%

- These would have been lost to followup early in the study, when “universal access” to ART’s had not yet commenced in Jamaica
Last documented CD4 count

N = 48

As evidence of immunological function
• < 200 (severe immuno deficiency) – 17%
• 200- 499 (moderate immunodeficiency) – 33%
• > 500 (immune reconstituted) – 50%
Last HIV Viral Load

N = 64

• < 50 c/ml – 25%
• 51- 1,000 c/ml – 24%
• 1001 – 10,000 c/ml – 14%
• 10,001 – 100,000 c/ml – 33%
• > 100,000 c/ml – 5%
Self-Reported Adherence to ART’s (since last visit)

N = 74

- Always – 32%
- Sometimes – 49%
- Never – 1%
Complications

N = 52

• Dermatological – 39%
  – Significantly more common in those with early sexual initiation (P < 0.10)
  – Chronic dermatitis (25%)
  – Perineal warts (23%)
  – Seborrheic dermatitis (11%)
  – *Tinea corporis* (8%)
  – *Tinea capitis* (4%)
  – *Molluscum contagiosum* (4%)
Complications

• Respiratory – 25% (11)
  – Bronchopneumonia in 13% (7)
  – Tuberculosis (8%)
  – Bronchiectasis (2%)
  – *Pneumocystis* pneumonia (2%)
  – Lymphocytic interstitial pneumonia in 2%,

• Neurological - 15% (8)
  – Meningitis (3%)
  – Seizures (3%)
Other Complications

- Other – 65% (34)
  - Lymphadenopathy (32%)
  - Oropharyngeal candidiasis (13%)
  - HIV wasting syndrome (11%)
  - Perineal abscess (11%)
  - Failure to thrive (8%)
  - Septicemia (6%)
  - Immune reconstitution syndrome (4%)
  - Disseminated gonococcal infection (4%)
Psychological Effects

N = 76

• Depression – 43%
  – This was significantly more frequent in those with early sexual initiation (P < 0.004)

N = 77

• Suicidal ideation, or attempt – 23%
Other Factors

N = 53

• Vaccines (which can prevent some STI’s)
  – Hepatitis B – 11%
  – Human papilloma virus vaccine - None

• Pregnancy (x 1, x 2 or more) – 60%
Deaths

N= 4 (5%)

- 15 yo male, sexually-abused by uncle at 9 years, non adherence; Histoplasmosis, Toxoplasmosis, CMV retinitis, Pneumocystis pneumonia, TB, Molluscum contagiosum
- 14 yo F, incest and rape at 9 years, suicidal ideation, early teen pregnancy, non adherence; Pneumocystis pneumonia, disseminated candidiasis, Wasting syndrome.
- 13 yo, sexually abused since 8 years, depression, suicidal attempts; non adherence; Pneumocystis pneumonia, vaginal warts
- 16 yo, diagnosed in pregnancy, nonadherence, depression, anemia, oesophageal candidiasis, defaulted from followup, died from HIV-attributable complications.
Conclusions

• We report a cohort of Jamaican children and youth with sexually-acquired HIV infection.
  – The majority were females, who experienced early sexual initiation, which was forced and commenced by adult perpetrators

• Inconsistent condom use, transactional sex and drug use increased their risk for ongoing sexual transmission.

• They exhibited difficulty coping with their illness, deleterious psychological effects, non-adherence and HIV attributable morbidity and mortality.
Recommendations

• Urgent interventions are needed to decrease child sexual abuse/statutory rape and decreased sexual transmission of HIV in youth, while assisting children and adolescents with sexually acquired HIV-infections to cope with their illness and engage in safe sexual practices.
THANK YOU!

Full manuscript is formally submitted for publication in a peer-reviewed medical journal