

HIV disease progression markers and treatment of HIV-infected children in Ukraine

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Background

- Ukraine has the highest adult HIV prevalence in Europe, estimated at 1.6%, with considerable unmet need for treatment among the adult HIV-positive population
- MTCT rates have declined from >25% before 2000 to 4% in 2008-10
- Data are lacking on the natural and treated history of HIV infection in children living in Eastern Europe
- Many HIV-infected children in Eastern Europe are from socially vulnerable families, with high prevalence of parental injecting drug use
- UNICEF & UNAIDS estimated that 52% of children with HIV in need of ART living in Central and Eastern Europe or the Commonwealth of Independent States did not receive this in 2009
- Research into the health and treatment of HIV-infected children in this resource-constrained country, or indeed elsewhere in Eastern Europe, has been limited to date.

Methods

- This new prospective paediatric HIV cohort study started enrolment in January 2011
- HIV/AIDS Centres from five cities across Ukraine participate (Kiev, Odessa, Donetsk, Mykolaiv, Mariupol)
- At enrolment, anonymised retrospective and current visit data are collected on study specific forms, following medical note review dating back to HIV diagnosis
- Enrolment data on children recruited by November 2011 were analysed to explore use of and response to ART
- Second-line ART was defined as change of ≥ 3 drugs simultaneously irrespective of reasons or changing 2 drugs due to treatment failure

Results

- 628 children were included in the analysis

Table 1: Baseline characteristics

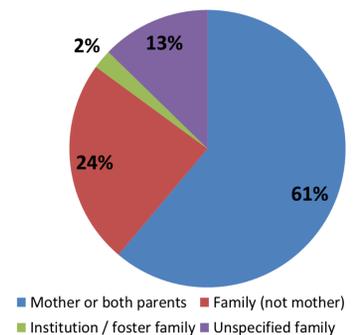
Characteristic	% or median
Age (IQR)	6.5 years (1 mth, 16 y)
Vertically acquired infection	99%
Female	53%
Preterm	14%
Low birth weight	17%
PMTCT prophylaxis exposure	
None	51%
sdNVP	17%
sdNVP+ZDVm	9%
ZDVm	19%
cART	4%
Maternal IDU	
Yes	26%
No	57%
Unknown	18%
Mother died	14%

Results

Disease status at enrolment

- 8% (n=51) WHO Stage 1, 46% (281) Stage 2, 30% (185) Stage 3 and 16% (97) Stage 4; (14, missing)
- HIV/HCV co-infection: 6% (26/435) of children aged >18 months HCV seropositive
- HBsAg positive: 1.6% (7/433)

Family situation



Antiretroviral therapy

- 498 children (79%) on ART
- Median age at initiation was 59.2 months (IQR 32.5, 84.8) in children born before 01/01/06, decreasing to 8.1 months (IQR 3.7, 23.0) subsequently

First-line therapy

- 64% (319/498) were on their first regimen, most commonly Kaletra-based (n=183), usually with a 3TC+ZDV backbone (n=158); 128 children were on NNRTI-based regimens
- 126 treated children had experienced ≥ 1 drug substitution
- Median time since ART initiation was 29 months (IQR 15, 52)

Second-line therapy

- 11% (n=53) treated children had switched to second-line regimens
- Median duration of first-line regimen was 26 months (IQR 14, 32)
- Median total ART duration was 70 months (IQR 44, 86)

Viral suppression on ART

- Of 377 children treated for ≥ 6 months by enrolment and with viral loads available, 69% (n=262) were virologically suppressed (<50 copies/ml) (median CD4% 33%)
- Among the 115 children with detectable viral loads, median was 240 copies/ml (IQR 94, 6166) (median CD4% 31%)

Table 2: Factors associated with non-suppressive ART

	AOR, p value	
Females vs males	0.61	0.03
ART duration (per year)	0.86	0.043
Lives with other family vs with mother	0.50	0.047
Exposed to antenatal HAART	10.4	0.046



Unmet need for treatment

- 130 children (median age 4.8 years) were not receiving ART, of whom 41 were eligible for ART according to WHO guidelines; only 2% of untreated children had CD4 measurements.
- 7% (21/282) of children at WHO stage 3-4 were not receiving ART and 32% (23/73) of children aged ≤ 24 months

Conclusions

- Both the overall coverage and response to ART were good in this paediatric population, although there was some unmet need for ART
- Age at ART initiation has substantially decreased over time, reflecting improved implementation of early infant diagnosis and ART roll-out
- Treated children living with their mothers had a lower probability of viral suppression than those living with family, reflecting the challenges of adherence where both mother and child are infected

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