

Children living with HIV in Ukraine: establishing a new paediatric cohort study

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Background

- Ukraine has the highest adult HIV prevalence in Europe, estimated at 1.6%
- 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
- Many of the HIV-infected children living in Ukraine today were born to mothers who received no PMTCT prophylaxis or for whom only abbreviated prophylaxis was available
 - Such exposures may have implications for the future health of these children
- UNICEF and UNAIDS estimated that 52% of children with HIV in need of ART living in Central and Eastern Europe or the Commonwealth of Independent States (CEE/CIS) did not receive this in 2009
- We have established a new paediatric HIV cohort in Ukraine in order to investigate HIV disease progression and management, to explore ART-related toxicities and to investigate growth in this population

Methods

- This new prospective paediatric HIV cohort study started enrolment in January 2011
- HIV-infected children and adolescents aged <18 years receiving HIV care are eligible for enrolment, with informed parental consent
- 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
- Data collected at enrolment include: socio-demographics, exposure to PMTCT prophylaxis, clinical status (WHO clinical stage, AIDS diagnosis and date), co-infections, anthropometry (height, weight, waist and hip circumference), Tanner score, hospitalisations, biochemistry, ART and other medication



- Follow-up data will be collected at least 6 monthly
- The study has been approved by the UCL Research Ethics Committee

Objective

- Here we present a preliminary descriptive analyses of the first 206 children enrolled in the study (up to April 2011)

Results

Table 1: Baseline characteristics of children

	N (%) or median (IQR)
Age (years)	7.2 (4.1, 10.0)
Mode of HIV acquisition	
Vertical	199 (97%)
Nosocomial	3 (1%)
Unknown	4 (2%)
Maternal IDU	
Yes	43 (21%)
No	121 (59%)
Unknown	42 (20%)
HCV coinfection¹	
Yes	5 (3%)
No	113 (59%)
Unknown	72 (38%)
PMTCT prophylaxis	
Antenatal/intrapartum ²	64 (32%)
Neonatal ³	85 (43%)

¹ if aged >18 months

² ZDVm: 39, sdNVP: 12, ZDV+sdNVP: 11, HAART: 2

³ ZDVm: 50, sdNVP: 21, ZDV+sdNVP: 14



- 99% of children were born in Ukraine
- 58% (117/206) were living with their parent(s) (43% with single mothers), with four living in institutions and the remainder with other family members

Table 2: Treatment and HIV disease characteristics at enrolment, by age group

	<3 years N=29	3-7 years N=92	8-12 years N=71	≥ 13 years N=14
	% or median (interquartile range)			
% female	58%	53%	45%	42%
Age at HIV diagnosis	4 m	1y 8m	1y 10m	4y 10m
% receiving ART	72%	77%	75%	86%
Age at ART start	6m	2y 10m	5y 1m	8y 0m
Duration on ART	1.2 (0.5, 2.1)	2.4 (1.5, 3.5)	4.7 (2.4, 6.5)	6.2 (4.4, 6.5)
CD4%	32 (27, 36)	32 (26, 38)	33 (26, 40)	28 (25, 32)
% with VL <50 copies/ml	43%	50%	66%	71%
% with AIDS	21%	17%	21%	29%

- Overall, 23% (44/193) of children had received an AIDS diagnosis, at a median age of 6 years (IQR 18 months, 8 years 4 months)
- The most common AIDS indicator diseases were HIV encephalopathy (n=14), PCP (n=6) and extrapulmonary TB (n=7)
- In addition to the 7 children with extrapulmonary TB, a further 9 had received a diagnosis of pulmonary TB
- 30 (15%) children had moderate unexplained malnutrition or severe unexplained malnutrition / wasting
- WHO clinical stage was available for 142 children to date: 30 (21%) were at stage 1, 27 (19%) at stage 2, 41 (29%) at stage 3 and 44 (31%) at stage 4

Treatment

- 41% (73/177) children had switched ≥1 regimen to date, with the most common reasons being treatment failure (n=28) and toxicity / fat redistribution (n=20)
- Overall, 21% (37/177) of the treated children had body fat redistribution: 22 (12%) had lipodystrophy alone, 6 (3%) had lipohypertrophy alone and 9 (5%) had the combined fat redistribution sub-type

Conclusions

- Nearly half of the children were infected despite PMTCT prophylaxis, around a quarter have been diagnosed with AIDS and most are receiving ART
- Earlier HIV diagnosis in the younger children is reassuring and reflects improvements in antenatal HIV screening and early infant diagnosis
- Our results highlight the vulnerability of HIV-infected children in Ukraine to TB
- Enrolment and follow-up are continuing and will allow us to characterise this population further

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Acknowledgements: We would like to thank the young people who participated in the study.

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Funding

The Ukraine Paediatric HIV Study has received funding from the European Union Seventh Framework Programme (FP7/2007-2013) under EuroCoord grant agreement n° 260694. C Thorne is supported by a Wellcome Trust Research Career Development Fellowship.

