

CHILDREN LIVING WITH HIV IN EUROPE: DO MIGRANTS HAVE WORSE TREATMENT OUTCOMES?

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Introduction

Adult migrants with HIV in Europe have increased risk of AIDS and poorer response to antiretroviral therapy (ART) compared to those domestic-born. There are few comparable data in children.

Objective

To assess the effect of migrant status on treatment outcomes among children living with HIV in Europe.

Inclusion criteria

Children aged <18 years at start of antiretroviral therapy (ART) in European paediatric HIV observational cohorts where ≥5% of children were migrants (defined as born abroad) were included, with follow-up to the earliest of last visit in paediatric care or 21st birthday.

Methods

Three outcomes were considered:

*World Health Organization (WHO) definition: CD4 <25% for children aged <1 year; <20% for 1-3 years; <15% for 3-5 years; <200 cells/mm³ or <15% for ≥5 years

- (i) severe immunosuppression-for-age* at 1 year after ART start;
- (ii) viremic viral load (≥400 copies/mL) at 1 year after ART start;
- (iii) AIDS/death after ART initiation, among those AIDS-free at ART start.

The effect of migrant status was assessed using univariable and multivariable logistic [(i) and (ii)] and Cox models [(iii)]. Multivariable models adjusted for the following: sex; year of birth; mode of HIV acquisition; initial ART regimen; region; calendar year, age, weight-for-age z-score (WAZ); and severe immunosuppression at ART initiation.

Missing CD4 and weight values at ART initiation were imputed. Sensitivity analyses compared migrants born in sub-Saharan Africa to domestic born.

Results

Patient characteristics

- A total of 2,620 children from 12 countries were included, of whom 1,474 (56%) were migrants. The proportion of migrants ranged from 5% in Greece and Poland to 98% in Sweden.
- Patient characteristics by migrant status are shown in Table 1.

Table 1: Patient characteristics, by migrant status

		Domestic-born	Migrant	p
		(N=1,146; 44%)	(N=1,474; 56%)	
		n (%) or median [IQR]		
Female sex		633 (55%)	752 (51%)	0.050
Place of birth	Sub-Saharan Africa	-	980 (66%)	-
	Europe	-	71 (6%)	
	Other	-	110 (7%)	
	Missing	-	313 (21%)	
Calendar year of birth	<2003	638 (56%)	1,131 (77%)	<0.001
	≥2003	508 (44%)	343 (23%)	
Mode of HIV acquisition	Vertical	1,108 (97%)	1,258 (85%)	<0.001
	Other	8 (1%)	66 (4%)	
	Missing	30 (3%)	150 (10%)	
Age at HIV diagnosis, years		0.8 [0.2, 3.2]	6.2 [2.8, 10.0]	<0.001
Age at ART start, years		1.8 [0.3, 7.6]	8.2 [4.0, 12.0]	<0.001
WHO immunological stage for age severe at ART start (n=952, 1086)		379 (40%)	519 (48%)	<0.001
AIDS diagnosis prior to ART		219 (19%)	210 (14%)	0.003
Duration of follow-up, years		7.8 [4.1, 11.4]	6.2 [3.4, 9.2]	<0.001

Severe immunosuppression at 1 year after ART start

- Among those with a CD4 measurement available at 1 year, similar proportions of migrant and domestic-born children had severe immunosuppression (8% and 6% respectively)
- There was no evidence of a difference p>0.1 in univariable or multivariable analyses (Table 2), or when restricting to those born in sub-Saharan Africa.

Table 2: Effect of migrant status on non-suppressed viral load, severe immune suppression, and first AIDS event/death at one year after ART initiation

	Number with outcome available	Number meeting outcome	Univariable			Multivariable		
			OR	95% CI	p	aOR	95% CI	p
Non-suppressed viral load (≥400 copies/mL) at 1 year								
Domestic-born	906/1,065 (85%)	216/906 (24%)	1	-	0.002	1	-	0.702
Migrant	1,016/1,367 (74%)	183/1,016 (18%)	0.70	0.56 - 0.88		0.95	0.71 - 1.26	
Severe immunosuppression at 1 year								
Domestic-born	869/1,065 (82%)	53/869 (6%)	1	-	0.174	1	-	0.409
Migrant	999/1,367 (73%)	77/999 (8%)	1.29	0.90 - 1.85		0.82	0.52 - 1.30	
First AIDS event/death								
Domestic-born	-	49/918 (5%)	1	-	0.206	1	-	0.072
Migrant	-	81/1,255 (6%)	1.26	0.88 - 1.79		1.51	0.96 - 2.38	

Conclusions

- Migrants in this study were predominantly from sub-Saharan Africa, and were older at treatment initiation, with a slightly higher proportion with poor immunological status at ART start compared to domestic-born children, comparable to findings reported in other paediatric studies
- After adjusting for characteristics at ART start, migrant children had comparable virological and immunological outcomes at 1 year after ART start, however there was some evidence of a difference in AIDS-free survival, which warrants further monitoring.

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