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Abacavir Usage Patterns and Hypersensitivity Reactions (HSR) in the EuroSIDA cohort

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Background

- Potentially fatal hypersensitivity reactions (HSR) occurs in 5-8% of those initiating abacavir (ABC)
- We describe the proportion of individuals on cART receiving ABC-based regimens and factors associated with ABC utilization and discontinuation

Methods

- We calculated the proportion of EuroSIDA individuals receiving ABC-based cART among those receiving cART each year after 1/1/2009
- Multivariable Poisson regression was used to identify demographic, clinical and laboratory factors associated with ABC utilization and any discontinuation or due to HSR or HSR/any toxicity within 6 weeks of ABC initiation

Results

- 3,472 (34%) received ABC-based cART of 10,076 on cART
- Temporal trends of ABC utilization remained steady, with some variation across regions (**Figure 1**)
- Lower ABC utilization was associated with older individuals, higher CD4 cell-counts, higher cART lines, prior AIDS diagnosis, and 2014 had the lowest utilization (**Figure 2**)
- Higher ABC utilization was associated with higher HIV viral loads, CKD, and DAD-CKD risk. Persons from Central-East and Eastern Europe were more likely to utilize ABC compared to other regions (**Figure 2**)
- 2,139 started ABC after 1/1/2009; within 6 weeks of ABC initiation (**Table 2**)
  - 113 discontinued for any reason; IR per 100 person years =14.5 (95% CI = 12.1, 17.5)
  - 10 discontinued due to HSR; IR = 0.3 (0.1, 1.0)
  - 35 discontinued due to HSR/any toxicity; IR = 4.5 (3.2, 6.3)
  - 7 individuals died; no deaths were attributed to HSR
- No factors were associated with ABC discontinuation

Conclusion

- ABC remains a commonly used ARV across Europe
- There is a low incidence of ABC discontinuation due to HSR in our study population
- Decrease in reported rates of HSR could be attributed to HLAB*5701 screening uptake, although this data was not available in EuroSIDA

Table 1: Baseline characteristics, split by ABC use (total *vs.* no ABC *vs.* ever *ABC*) in the EuroSIDA cohort from 1/1/2009 to 4/1/2016

	Total N = 10076		No ABC N = 6604		ABC N = 3472		
	No.	%	No.	%	No.	%	p-value
Gender							
Male	7408	74	4926	75	2482	72	0.001
Female	2668	27	1678	25	990	29	
Region of Care in Europe							
South	2819	28	1962	30	857	25	<0.001
West	2478	25	1672	25	806	23	
North	2187	22	1348	20	839	24	
Central-East	1430	14	897	14	533	15	
East	1162	12	725	11	437	13	
HIV-Risk group							
MSM	4,054	40	2,701	41	1,353	39	0.171
IDU	2,198	22	1,438	22	760	22	
MSW	3,138	31	2,012	31	1,126	32	
OTH/NK	686	7	453	7	233	7	
Calendar year *ł	2009	(2009, 2011)	2009	(2009, 2011)	2011	(2009, 2010)	0.001
Baseline Age ł	45	(37, 52)	45	(37, 51)	51	(38, 52)	0.001
Baseline HIV-RNA ł	49	(39, 74)	49	(39, 71)	71	(33, 90)	<0.001
Baseline CD4 cell count ł	490	(337, 688)	488	(340, 679)	679	(333, 709)	0.385
CKD	172	2	106	2	66	2	<0.001
AIDS	3,228	32	2,045	31	1,183	34	0.001

Baseline defined study entry (1/1/2009 or enrolment into EuroSIDA, whichever occurred latest); % are column percentages; * calendar year of first ABC utilization; ł values are median (IQR); Region of care in Europe - South: Argentina, Greece, Israel, Italy, Portugal, Spain; West: Austria, Belgium, France, Germany, Luxembourg, Switzerland, North: Denmark, Finland, Iceland, Ireland, Netherlands, Norway, Sweden, United Kingdom; Central-East: Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Hungary, Poland, Romania, Serbia; Slovakia, Slovenia East: Belarus, Estonia, Georgia, Latvia, Lithuania, Russian Federation, Ukraine; MSM - sex between men; IDU - injection drug use; MSW - sex between men and women; OTH/NK - other, unknown

Figure 1: Percent (95% CI) prescribed ABC at the midpoint of each year overall and by region in the EuroSIDA cohort from 2009 to 2016

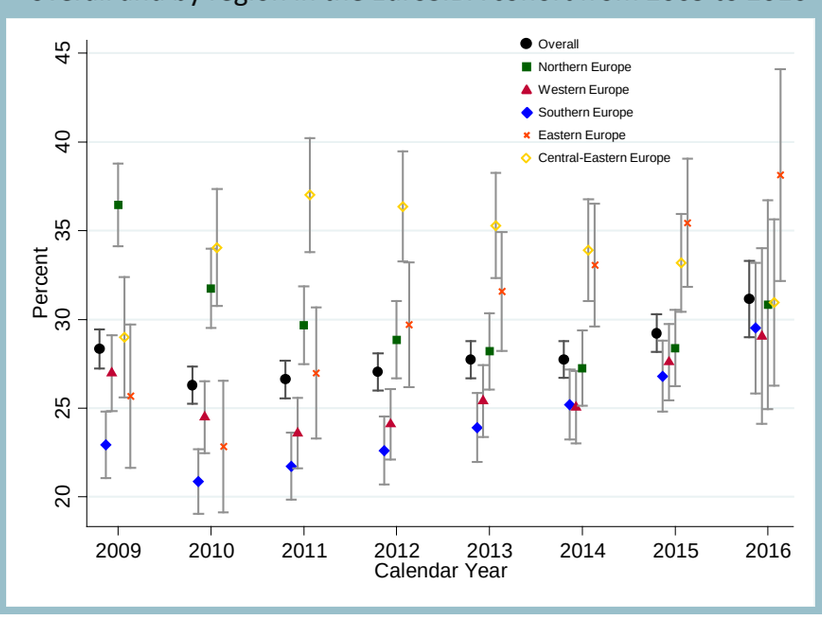

Figure 2: Multivariable incidence rate ratios for ABC utilization in the EuroSIDA cohort from 1/1/2009 to 4/1/2016

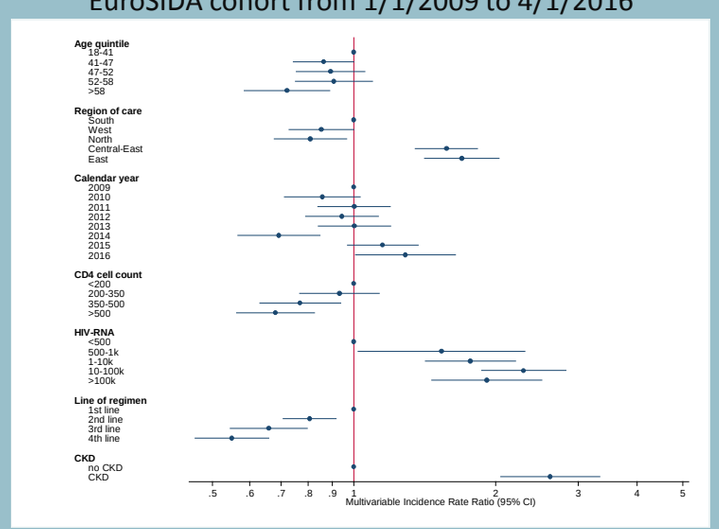

Table 2. Reasons and incidence rates for ABC discontinuation in the EuroSIDA cohort from 2009-2016. Individuals were censored at 6 weeks after ABC initiation, ABC discontinuation or death, whichever came first.

Reason for stopping treatment	Failures	Rate*	95% CI
Any Reason	113	14.51	(12.07, 17.45)
HSR or any toxicity	35	4.49	(3.23, 6.26)
Any toxicity	22	2.82	(1.86, 4.29)
Unknown	21	2.70	(1.76, 4.14)
Patient's wish/decision	20	2.57	(1.66, 3.98)
Other causes	17	2.18	(1.36, 3.51)
Physician's decision	16	2.05	(1.26, 3.35)
Toxicity - GI tract	16	2.05	(1.26, 3.35)
HSR	13	1.67	(0.97, 2.87)
Toxicity – Liver	2	0.26	(0.06, 1.03)
Toxicity, predominantly CNS	2	0.26	(0.06, 1.03)
Toxicity, predominantly kidneys	2	0.26	(0.06, 1.03)
Treatment Failure	1	0.13	(0.02, 0.91)
Concern of cardiovascular disease, including dyslipidaemia	1	0.13	(0.02, 0.91)
Other Toxicity	1	0.13	(0.02, 0.91)
Non-compliance	1	0.13	(0.02, 0.91)

*Total person years follow-up = 778; Rate = per 100 person years

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EuroSIDA