

**Table 1. Patient Characteristics at Start of Combination Antiretroviral Therapy.**

	with KS		without KS	
	N	%	N	%
<b>Total</b>	916		108,545	
<b>Exposure group</b>				
MSM	554	60.5	40,418	37.2
Heterosexual contact	211	23.0	32,142	29.6
Women	107	11.7	29,738	27.4
Unknown	44	4.8	6,247	5.8
<b>Origin</b>				
Europe	713	77.8	83,801	77.2
Africa	146	15.9	16,184	14.9
North America	49	5.3	6,284	5.8
Other	8	0.9	2,276	2.1
<b>Age group [years]</b>				
Median (IQR)	38	(32.1-46.4)	37.3	(31.2-44.7)
16-30	152	16.6	22,256	20.5
31-40	366	40.0	43,238	39.8
41-50	233	25.4	27,903	25.7
>50	165	18.0	15,148	14.0
<b>CD4 cell count [cells/ul]</b>				
Median(IQR)	146	(43-302)	250	(124-370)
<50	224	24.5	12,278	11.3
50-99	105	11.5	8,104	7.5
100-199	155	16.9	17,120	15.8
200-349	188	20.5	31,793	29.3
350-499	87	9.5	16,592	15.3
≥500	62	6.8	10,952	10.1
Missing	95	10.4	11,706	10.8
<b>HIV RNA viral load [copies/mL]</b>				
Median(IQR)	147,819	(50,000-384,000)	75,000	(19,000-222,000)
≥100,000	460	50.2	38,329	35.3
10,001-99,999	236	25.8	34,561	31.8
501-9,999	48	5.2	12,322	11.4
≤500	3	0.3	1,561	1.4
Missing	169	18.4	21,772	20.1
<b>CDC stage</b>				
A/B	640	69.9	90,642	83.5
C	237	25.9	15,415	14.2
Missing	39	4.3	2,488	2.3
<b>Late Presentation</b>				
No	231	25.2	42,096	38.8
Yes	649	70.9	60,753	56.0
Missing	36	3.9	5,696	5.2
<b>First-line cART regimen</b>				
Nonboosted PI	253	27.6	21,478	19.8
Boosted PI	334	36.5	37,918	34.9
NNRTI without PI	293	32.0	42,581	39.2
Other	36	3.9	6,568	6.1
<b>Calendar year of enrolment</b>				
1996-2000	336	36.7	29,676	27.3
2001-2005	334	36.5	35,781	33.0
2006-2010	191	20.9	32,844	30.3
2011-2014	55	6.0	10,244	9.4

Abbreviations: MSM, men who have sex with men; cART, combination antiretroviral therapy; KS, Kaposi Sarcoma; CDC, United States Centers for Disease Control; IQR, interquartile range; NRTI, nucleotide reverse-transcriptase inhibitors; NNRTI, Non-nucleoside reverse-transcriptase inhibitors; PI, Protease inhibitors.

**Table 2. Risk Factors for Developing Kaposi Sarcoma by Time Periods Since Starting Combination Antiretroviral Therapy. Results from Multivariable Cox Regression Models.#**

		30-90 days (201 KS/90789 patients)		91-180 days (130 KS/91646 patients)		6 -12 months (116 KS/90511 patients)		1-2 years (93 KS/85735 patients)		2-5 years (156 KS/75503 patients)		5-8 years (94 KS/48498 patients)		
		HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI	p-value <sup>&amp;</sup>
Exposure group	MSM	5.87	(3.90-8.83)	2.84	(1.84-4.39)	3.32	(2.05-5.37)	3.00	(1.78-5.05)	4.17	(2.73-6.35)	4.43	(2.55-7.70)	0.46
	Heterosexual men	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	
	Women	0.86	(0.50-1.48)	0.54	(0.30-0.96)	0.62	(0.33-1.16)	0.67	(0.34-1.30)	0.65	(0.37-1.13)	0.41	(0.18-0.95)	
Origin	European	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	0.93
	African	2.01	(1.23-3.28)	2.07	(1.23-3.47)	2.22	(1.26-3.90)	2.21	(1.19-4.12)	1.96	(1.19-3.24)	1.69	(0.84-3.40)	
	Other	0.86	(0.49-1.51)	1.53	(0.84-2.80)	0.67	(0.29-1.55)	1.22	(0.52-2.89)	1.02	(0.53-1.98)	0.65	(0.23-1.83)	
Age group [years]*	16-30	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	0.07
	31-40	1.04	(0.67-1.64)	2.01	(1.05-3.85)	1.37	(0.75-2.50)	1.31	(0.62-2.74)	0.92	(0.54-1.59)	0.56	(0.27-1.17)	
	41-50	1.34	(0.85-2.13)	1.70	(0.85-3.39)	1.08	(0.56-2.08)	1.65	(0.77-3.52)	0.83	(0.47-1.48)	0.28	(0.13-0.62)	
	>50	1.52	(0.92-2.51)	2.74	(1.35-5.58)	1.90	(0.97-3.73)	2.42	(1.09-5.40)	1.21	(0.66-2.22)	0.52	(0.23-1.16)	
CD4 cell count [cells/ $\mu$ l]*	<50	7.37	(4.26-12.7)	7.56	(3.85-14.8)	14.10	(6.68-29.8)	9.15	(4.06-20.6)	6.41	(3.40-12.1)	7.08	(3.32-15.1)	0.50
	50-99	4.93	(2.77-8.80)	5.53	(2.86-10.7)	4.33	(1.90-9.88)	4.24	(1.79-10.0)	4.35	(2.18-8.68)	1.90	(0.62-5.86)	
	100-199	3.46	(2.04-5.85)	2.89	(1.56-5.34)	4.16	(2.20-7.87)	1.43	(0.66-3.11)	2.32	(1.31-4.11)	3.24	(1.60-6.54)	
	200-349	1.89	(1.13-3.14)	1.52	(0.83-2.77)	1.62	(0.84-3.12)	1.04	(0.53-2.05)	1.45	(0.89-2.36)	1.33	(0.68-2.59)	
	350-499	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	
	> 500	0.40	(0.17-0.94)	0.76	(0.36-1.59)	1.05	(0.53-2.07)	0.91	(0.49-1.71)	0.62	(0.38-1.00)	0.59	(0.32-1.11)	
HIV RNA viral loads [copies/mL]*	$\geq$ 100,000	1.46	(0.96-2.20)	1.65	(0.99-2.75)	1.81	(0.96-3.41)	3.08	(1.56-6.09)	5.34	(3.20-8.92)	9.72	(5.34-17.7)	<0.001
	10,001-99,999	1.04	(0.65-1.68)	0.70	(0.34-1.43)	1.51	(0.77-2.96)	2.10	(1.07-4.12)	3.90	(2.46-6.19)	2.24	(1.11-4.53)	
	501-9,999	1.28	(0.87-1.88)	1.04	(0.65-1.66)	1.46	(0.83-2.55)	0.95	(0.46-1.97)	2.24	(1.35-3.73)	2.25	(1.13-4.46)	
	$\leq$ 500	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	
First-line cART regimen	Nonboosted PI	0.53	(0.32-0.90)	0.82	(0.46-1.46)	1.65	(0.88-3.08)	0.86	(0.46-1.62)	0.95	(0.58-1.53)	0.91	(0.49-1.68)	0.12
	Boosted PI	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	
	NNRTI without PI	0.58	(0.42-0.81)	1.10	(0.72-1.69)	1.05	(0.66-1.65)	0.84	(0.50-1.41)	0.90	(0.60-1.36)	0.61	(0.32-1.14)	
	Other	0.50	(0.22-1.15)	1.41	(0.70-2.86)	1.21	(0.50-2.90)	-	-	0.35	(0.13-0.99)	0.52	(0.18-1.54)	
Calendar year of enrolment	1996-2000	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	1.00	-	0.39
	2001-2005	1.20	(0.77-1.89)	0.79	(0.48-1.29)	1.84	(1.03-3.31)	0.60	(0.34-1.08)	1.23	(0.80-1.87)	0.99	(0.57-1.71)	
	2006-2010	0.88	(0.53-1.44)	0.66	(0.38-1.18)	1.77	(0.91-3.43)	0.70	(0.37-1.33)	0.77	(0.42-1.41)	0.75	(0.17-3.34)	
	2011-2014	1.29	(0.71-2.32)	1.01	(0.46-2.21)	1.46	(0.54-3.95)	-	-	-	-	-	-	

# Only cases with no missing values for any of the covariates have been used in this cox-regression model. Hazard ratios are adjusted for exposure group, origin, current age, current CD4 cell counts, current HIV RNA viral loads, first-line cART regimen, calendar period of enrolment; and stratified by cohort. Abbreviations: MSM, men who have sex with men; cART, combination antiretroviral therapy; KS, Kaposi Sarcoma; NNRTI, Non-nucleoside reverse-transcriptase inhibitors; PI, Protease inhibitors. \* Time-updated data; & P-value for change over time from test of interaction

**Figure 1: Kaposi Sarcoma Incidence Rates Overall and Stratified for Selected Risk Factors by Time Periods Since Starting Combination Antiretroviral Therapy.**

Abbreviations: cART, combination antiretroviral therapy; MSM, men who have sex with men; pys, person-years.