Incidence of AIDS-defining opportunistic illnesses (ADOIs) among patients with no prior clinical AIDS: the NA-ACCORD, 2000-2010

Kate Buchacz[1], Bryan Lau[2], Yuezhou Jing[2], Stephen J Gange[2], Richard D Moore[2] and John T Brooks[1] for the North American AIDS Cohorts Collaboration on Research and Design (NA-ACCORD) of IeDEA

[1]CDC, Atlanta, GA, USA; [2]Johns Hopkins University, Baltimore, MD, USA.

Background:

- It is not known if the rates of AIDS-defining opportunistic illnesses (ADOIs) have continued to decline or have stabilized in the recent HAART era among HIV-infected patients in care in North America, and how these ADOIs present among all patients and within a subset initiating HAART.

Methods:

- Studied 71,484 HIV-infected patients followed in 14 participating cohorts in NA-ACCORD in the U.S. and Canada during 2000-2010.
- Analyzed incident ADOIs among 55,877 patients; excluded 15,607 (21.8%) patients with documented prior ADOIs
- Calculated incidence rates per 100,000 person-years (py) with 95% confidence intervals (CIs) based on Poisson distribution for the first occurrence of any ADOI, and for the first occurrence of select ADOIs that were uniformly ascertained in the participating cohorts.
- Examined incidence of any ADOI in a subset of patients who initiated HAART during 2000-2010. Also estimated time to any first ADOI, by Kaplan-Meier method, taking into account competing risk of death.
- Examined CD4 count and HIV viral load closest to incident ADOI diagnoses (closest within – 6 months to + 3 months)
- Analyzed data by year and by 3 periods: 2000-03, 2004-07, and 2008-10
- ADOIs defined according to CDC surveillance case definition for HIV, 2008

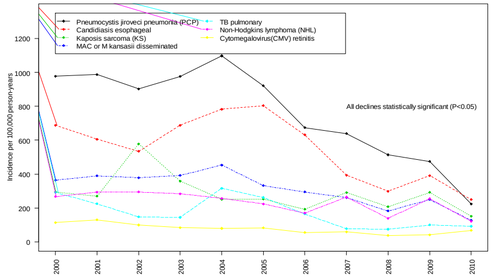
Results:

- The 55,877 patients contributed 222,919 person-years of observation, of whom 7,919 (14.2%) developed at least one ADOI.

Incidence Rates per 100,000 py [number of events], (95% CIs)

Calendar period	2000-2003	2004-2007	2008-2010
Person-years	69,249	86,488	67,182
Any first ADOI	4313 [2987] (4161 – 4471)	3432 [2969] (3311 – 3558)	2634 [1770] (2514 – 2760)
Death any time	1961 [1401] (1861 – 2066)	2526 [2272] (2424 – 2632)	2199.7 [1502] (2091 – 2314)
Composite—first ADOI or death	5659 [3966] (5486 – 5838)	4996 [4393] (4851 – 5147)	4152 [2811] (4001 – 4308)

The incidence of select ADOIs among all 55,877 patients, 2000-2010



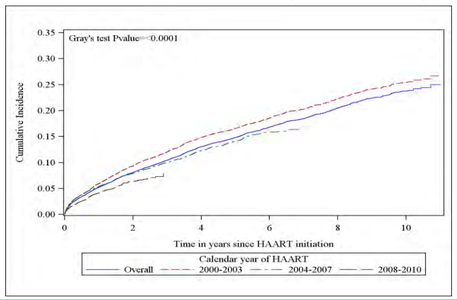
Results:

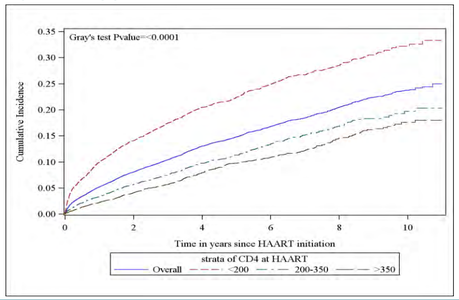
Study population characteristics: all patients and the subset starting HAART

Patients at risk of incident ADOI		N (%) unless otherwise specified	
Characteristics*	Select strata shown	All patients at risk (n= 55,877)	Patients starting HAART (n = 23,460)
Age (years)	Median (Q1-Q3)	40.2 (33.8-47.0)	40.3 (33.3-47.3)
Sex	Male	43,489 (77.8%)	18,220 (77.7%)
Race/ethnicity	White	22,168 (39.7%)	8,566 (36.5%)
	Black	22,003 (39.4%)	9,714 (41.4%)
	Hispanic	8,657 (15.5%)	3,945 (16.8%)
HIV risk group	MSM	24,177 (43.3%)	10,367 (44.2%)
	IDU	9,668 (17.3%)	3,277 (14.0%)
	Heterosexual	15,314 (27.4%)	7,202 (30.7%)
Country of cohorts	USA	53,045 (94.9%)	22,158 (94.5%)
	Canada	2,832 (5.1%)	1,302 (5.5%)
Type of cohort	Interval	2,805 (5.0%)	1,254 (5.3%)
	Clinical	53,072 (95.0%)	22,206 (94.7%)
CD4 count, cells/mm^3 (nearest +/-6 months)	Median (Q1-Q3)	371 (204-568)	275 (149-413)
	<200	12,946 (23.2%)	7,873 (33.6%)
	200-349	11,834 (21.2%)	7,153 (30.5%)
	350-499	11,033 (19.7%)	4,218 (18.0%)
	500+	17,329 (31.0%)	3,771 (16.1%)
HIV viral load, cp/mL (nearest +/-6 months)	Median (Q1-Q3)	5,690 (120-53,394)	13,477 (400-88,832)
Ever used HAART	Yes	24,765 (44.3%)	N/A

*Characteristics at or nearest to start of observation for all patients at risk of any first ADOI, and at or nearest to HAART start for those initiating HAART.

Cumulative incidence of any first ADOI among 23,460 patients, by year and CD4 count at start of HAART





CD4 cell counts among 7,919 patients with an incident ADOI, 2000-2010

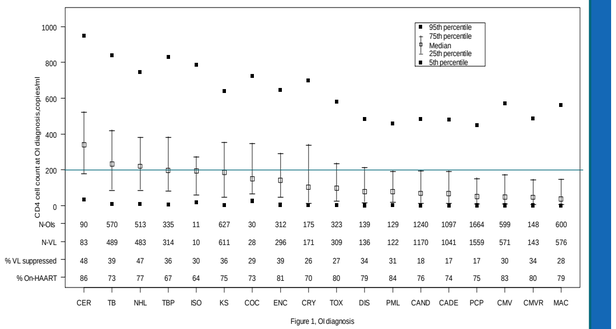
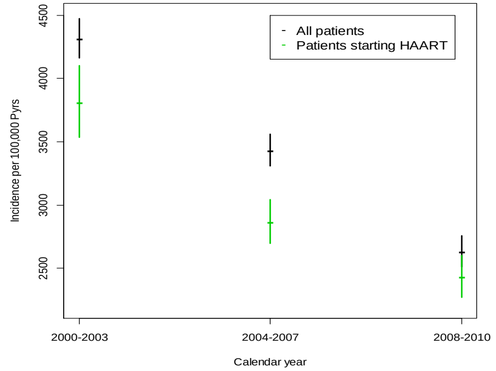


Figure 1, OI diagnosis

Abbreviations: CADE-candidiasis esophageal; CER-cervical cancer; CMVR-CMV retinitis; COC-coccidiomycosis; CRY-cryptosporidiosis; ENC-encephalopathy; DIS-histoplasmosis disseminated; ISO-isosporiasis chronic intestinal; MAC-MAC or M kansasii disseminated; TBP-TB pulmonary; PCP-pneumocystis jiroveci pneumonia; PML-progressive multifocal leukoencephalopathy; TOX-toxoplasmosis;

Incidence of any first ADOIs, by period



Conclusions:

- **We observed persistent reductions in incidence rates of ADOIs among HIV-infected North American patients in care during 2000-2010, including within a contemporary subset of patients initiating HAART.**
- **ADOIs occurred at a wide range of CD4 cell counts, and frequently among patients who were virologically suppressed.**

Acknowledgements

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Contact Info

Kate Buchacz, PhD

Divisions of HIV/AIDS Prevention, CDC

(acu7@cdc.gov)

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National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention

Division of HIV/AIDS Prevention

E-mail: cdcinfo@cdc.gov | Web: www.cdc.gov
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