

HIV-CUP CROI 2013

HIV/Hepatitis B coinfection

Dr. Gilles Wandeler, Universität Bern

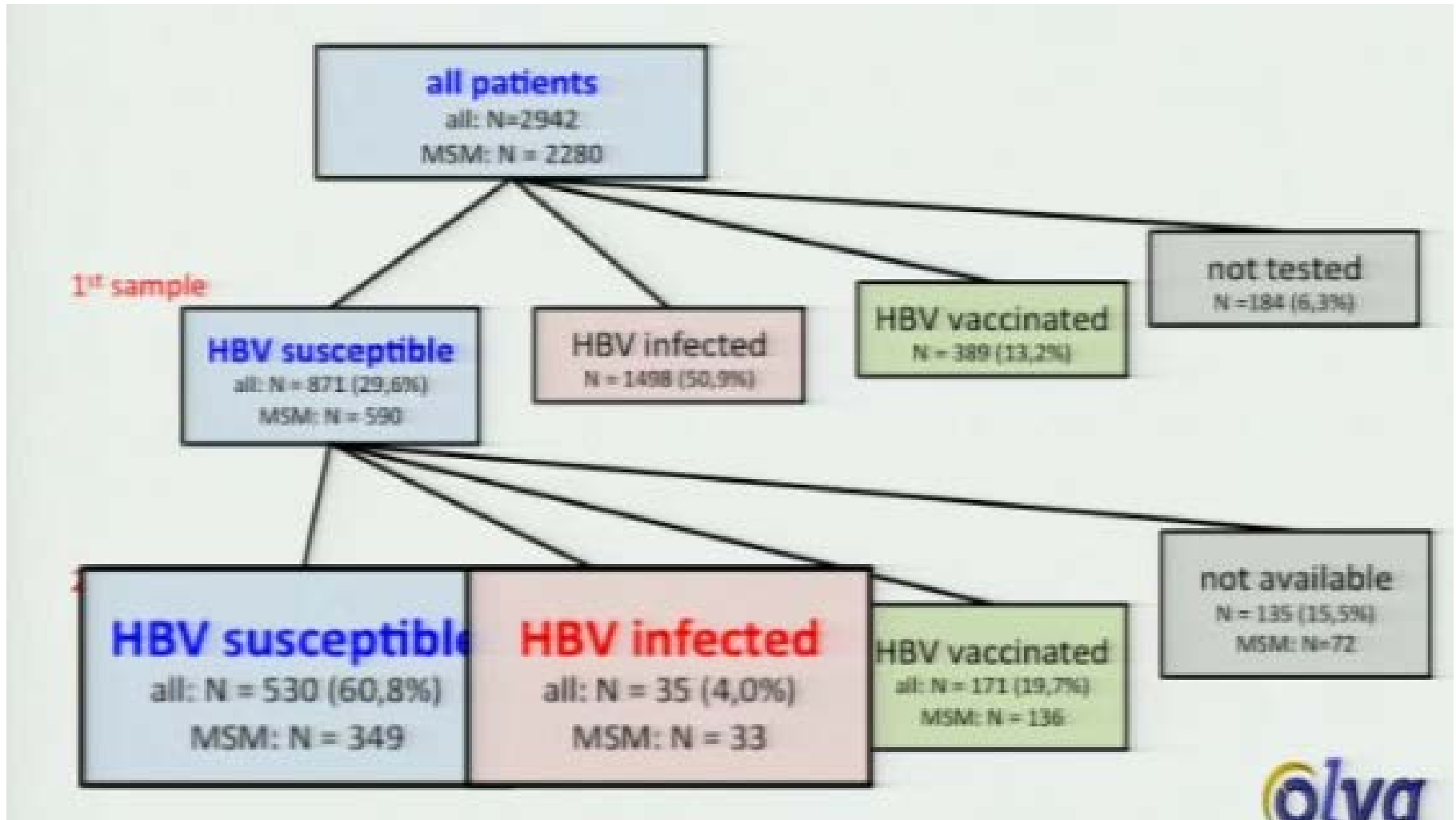
HBV-“PrEP” with HBV-active ART

Amsterdam-Kohorte 1983-2012

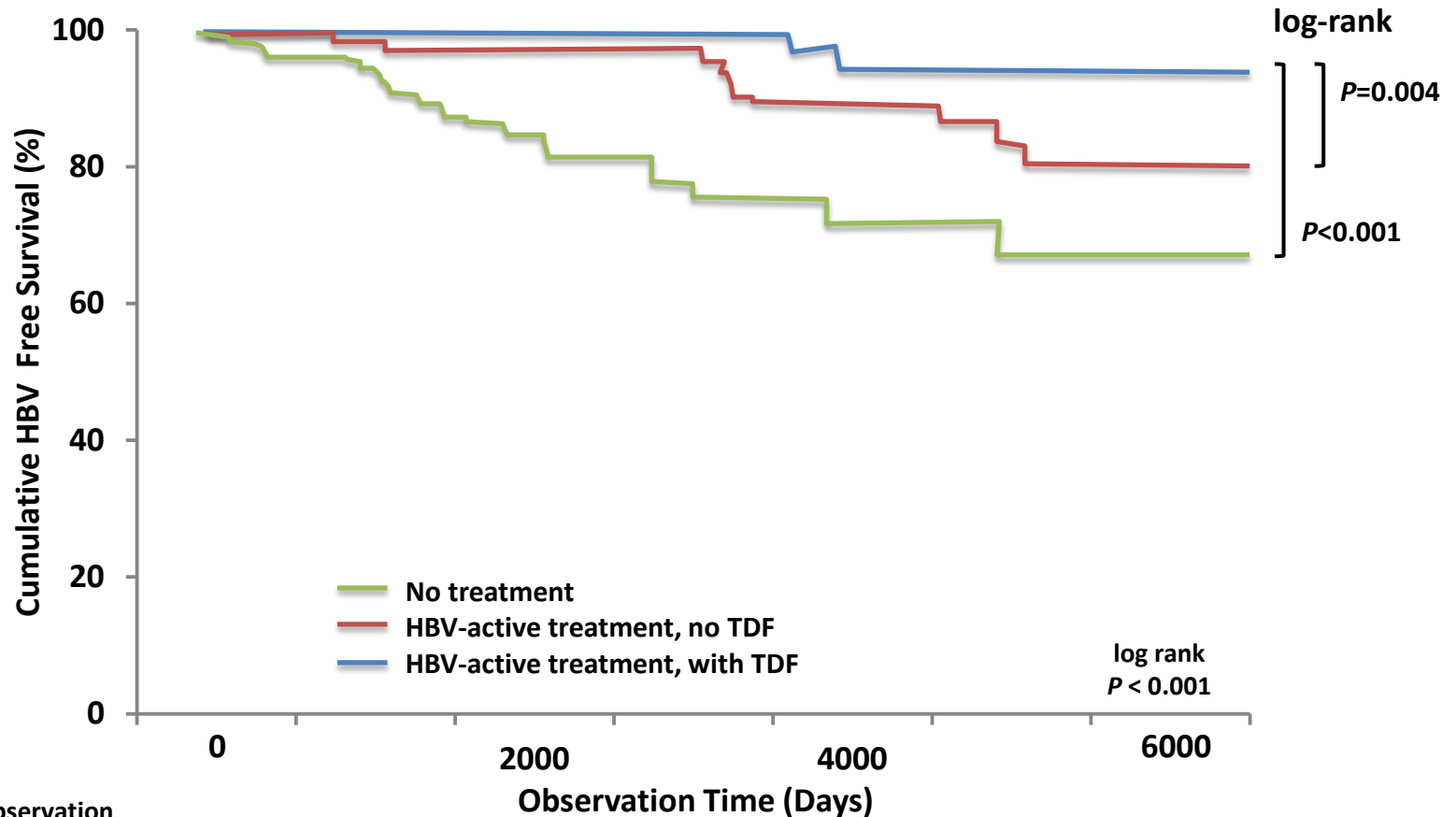
- **Research question:** Does HBV-active cART protect against new HBV infection (HBV-PrEP)?
- **Patient selection:** all HBV-susceptible patients at entry, anti-HBc and anti-HBs negative (<10 IU/L) and 2nd sample available in time for follow-up HBV serology
- **Main analysis:** incidence of HBV infections (anti-HBc seroconversions) and relation with exposure to HBV active ART

HBV-“PrEP” with HBV-active ART

Amsterdam-Kohorte 1983-2012



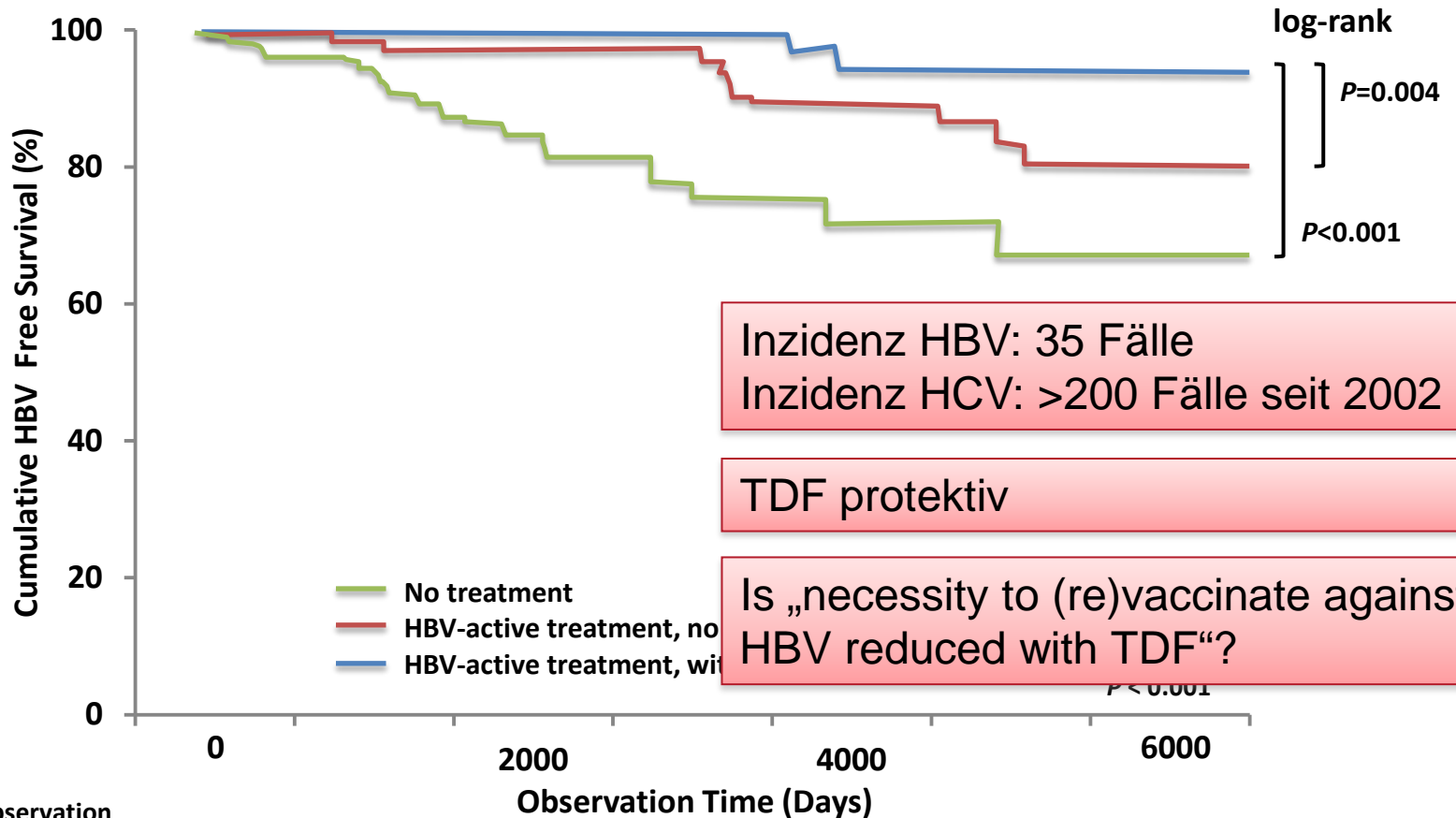
Kaplan Meier: HBV-Free Survival (MSM)



Numbers in Observation

	0	2000	4000	6000
No Treatment	107	50	19	8
Treatment, No TDF	86	67	36	16
Treatment, with TDF	189	49	38	12

HBV-“PrEP“ with HBV-active ART: Conclusions



Inzidenz HBV: 35 Fälle
Inzidenz HCV: >200 Fälle seit 2002

TDF protektiv

Is „necessity to (re)vaccinate against HBV reduced with TDF“?

Predictors of HBV suppression on TDF in HIV/HBV-coinfected Patients

CNICS Cohort, USA, 1996-2011

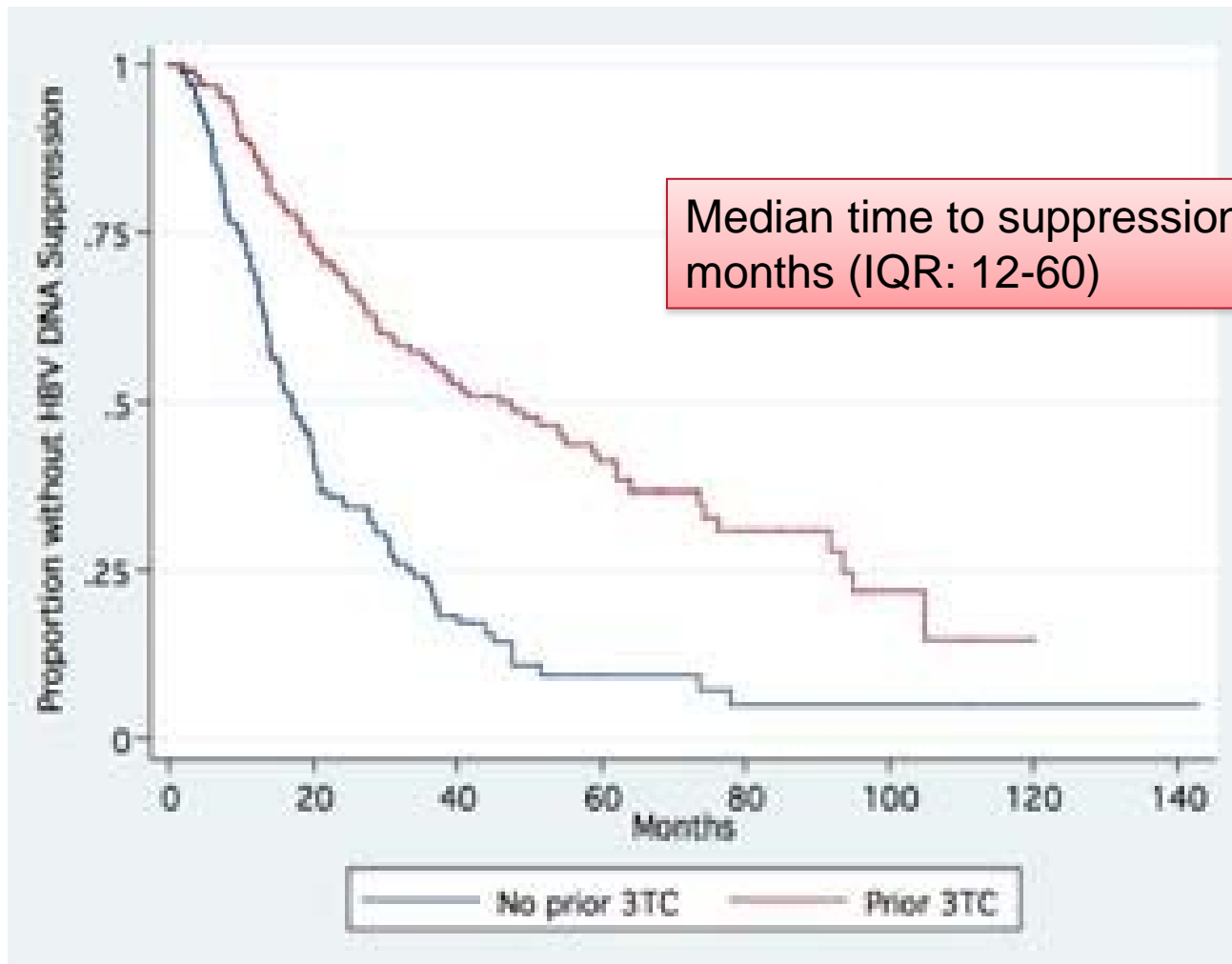
- **Research objective:** To examine the effect of prior 3TC exposure and other risk factors on HBV suppression in a cohort of HIV/HBV-coinfected patients on TDF
- **Patient selection:** all patients with chronic HBV infection (HBsAg+ or HBV DNA+) on TDF (> 6 mo) with baseline and on-ART HBV DNA measurements
- **Main analysis:** Time to suppression (HBV DNA level <200 IU/ml) while on TDF according to different risk factors

Predictors of HBV suppression on TDF in HIV/HBV-coinfected Patients

- 1,067 (4.3% of 24,911) chronic HBV carriers
- 874 were treated with TDF x ≥ 6 months
- N=315 analyzed (with HBV measurements and detectable baseline HBV DNA)

	Total (n=315)	Prior 3TC (n=142)	No Prior 3TC (n=173)	P-value
Age, years (median, IQR)	41 (36-47)	41 (37-46)	42 (36-48)	0.76
Sex, female	23 (7.3)	10 (7.0)	13 (7.5)	0.87
Race				
White	158 (50.3)	77 (54.2)	81 (47.1)	0.06
Black	127 (40.4)	57 (40.1)	70 (40.7)	
Hispanic	17 (5.4)	7 (4.9)	10 (5.8)	
Other	12 (3.8)	1 (0.7)	11 (6.4)	
HCV coinfection	51 (16.2)	28 (19.7)	23 (13.3)	0.12
HBeAg-positive*	203 (87.9)	111 (92.5)	92 (82.9)	0.07
Baseline HBV DNA >10,000 IU/ml	277 (87.9)	131 (92.3)	146 (84.4)	0.03

Predictors of HBV suppression on TDF in HIV/HBV-coinfected Patients



Predictors of HBV suppression on TDF in HIV/HBV-coinfected Patients

Variable	Hazard ratio (95% CI)	P-value
3TC exposure	0.38 (0.28, 0.52)	<0.01
Age >40 years	1.04 (0.78, 1.39)	0.76
CD4 nadir (Ref: ≥500 cells/mm³)		
350-499	0.42 (0.25, 0.71)	<0.01
200-349	0.44 (0.27, 0.72)	<0.01
<200	0.43(0.27, 0.67)	<0.01
HBV DNA level >10,000 IU/ml	0.54 (0.37, 0.79)	<0.01
Race (Ref: White)		
Black	0.67 (0.48, 0.94)	0.02
Hispanic	0.55 (0.24, 1.22)	0.14
Other	1.80 (0.94, 3.41)	0.08
Serum ALT >80 U/L	1.26 (0.92, 1.73)	0.15

Predictors of HBV suppression on TDF in HIV/HBV-coinfected Patients

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Conclusion:

Avoid 3TC monotherapy for HBV!

HIV infection and liver fibrosis in sub-Saharan Africa: 1 publication to date

High Prevalence of Liver Fibrosis Associated with HIV Infection: A Cross-Sectional Study in Rural Rakai, Uganda

Lara Stabinski¹, Steven J. Reynolds^{1,2}, Ponsiano Ocama³, Oliver Laeyendecker¹, Iga Boaz⁴, Anthony Ndyanabo⁴, Valerian Kiggundu⁴, Ron H. Gray^{4,5}, Maria Wawer^{4,5}, Chloe Thio², David L. Thomas², Thomas C. Quinn^{1,2}, and Gregory D. Kirk⁶ on behalf of the Rakai Health Sciences Program

- 500 HIV-infected cases and 500 HIV-uninfected controls
- Significant fibrosis (Fibroscan[®]): 17% in cases vs. 11% in controls
- ART reduced fibrosis in HIV-infected patients (aPRR: 0.6; 0.4-1.0)
- Risk factors for liver fibrosis:
 - HIV-infection (aPRR 1.5, 95% CI: 1.1-2.1), chronic HBV infection, male sex, occupational fishing, heavy alcohol consumption, herbal medicine use

Liver fibrosis in HIV/HBV-coinfected Patients in Nigeria

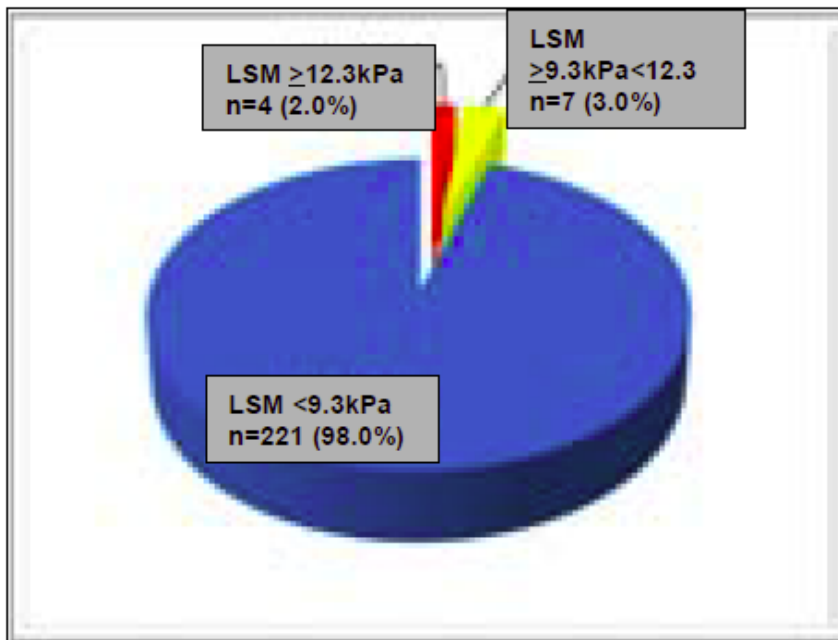
AIDS Prevention Initiative in Nigeria, Jos, Nigeria, 2011-12

- **Research objective:** To determine the prevalence of liver fibrosis (using fibroscan) and describe related risk factors in ART-naïve HIV and HIV/HBV-coinfected patients in Nigeria
- **Patient selection:** all ART-naïve HIV-infected adults with known HBV status and no chronic HCV infection
- **Main analysis:** Regression analyses to determine risk factors for significant liver fibrosis (liver stiffness measurement (LSM) >9.2 kPa) and liver cirrhosis (LSM >12.2 kPa)

Liver fibrosis in HIV/HBV-coinfected Patients in Nigeria

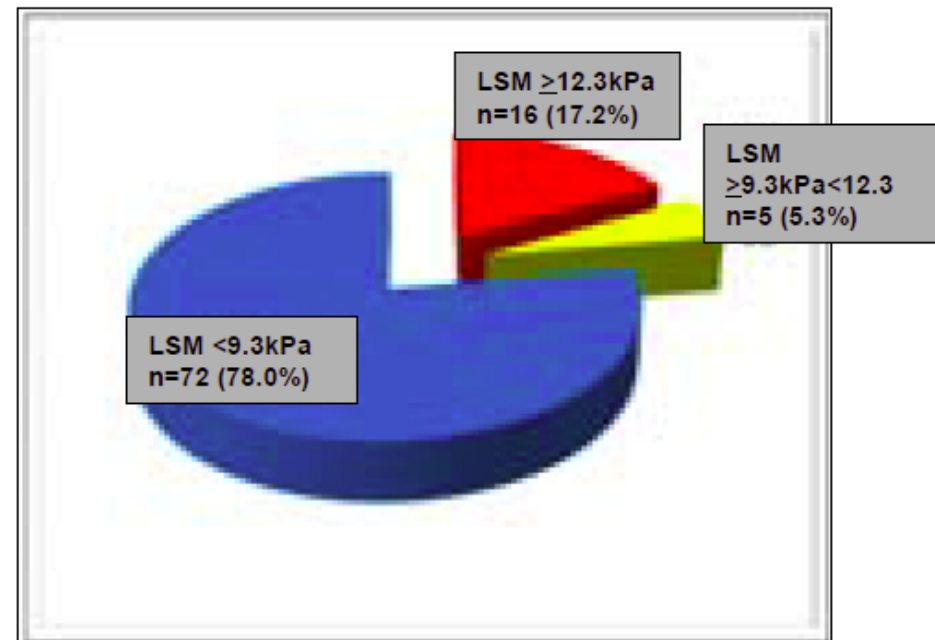
232 HIV-infected

- Age: 36 (IQR: 31-43)
- Male 25%
- CD4: 384 cells/ul (269-506)



93 HIV/HBV-coinfected

- Age: 33 (IQR: 30-41)
- Male 40%
- CD4: 264 cells/ul (172-380)



Liver fibrosis in HIV/HBV-coinfected Patients in Nigeria

Table 2. Correlates of significant liver fibrosis LSM \geq 9.3 kPa (all patients)

	Univariate		Multivariate	
	OR, 95% CI	p value	OR, 95% CI	p value
Age \geq 30 yrs	1.08 (0.43, 3.09)	0.87	1.16 (0.44, 3.03)	0.30
Male gender	1.8 (0.77, 4.02)	0.12	1.34 (0.58, 3.12)	0.70
HBsAg+ Positive	5.9 (2.54,14.06)	<0.001	5.52 (2.47, 12.32)	<0.001
Married	0.7 (0.30,1.50)	0.27	-	-
Current alcohol use	1.11 (0.44,2.64)	0.79	1.13 (0.48, 2.67)	0.78
ALT \geq 30	1.10 (0.48, 2.72)	0.80	-	-
BMI \geq 25	0.48 (0.17,1.19)	0.09	0.50 (0.20, 1.23)	0.13
CD4 <200	1.55 (0.57-0.32)	0.31	0.99 (0.38, 2.53)	0.98

Liver fibrosis in HIV/HBV-coinfected Patients in Nigeria

Table 2. Correlates of significant liver fibrosis LSM_≥9.3 kPa (all patients)

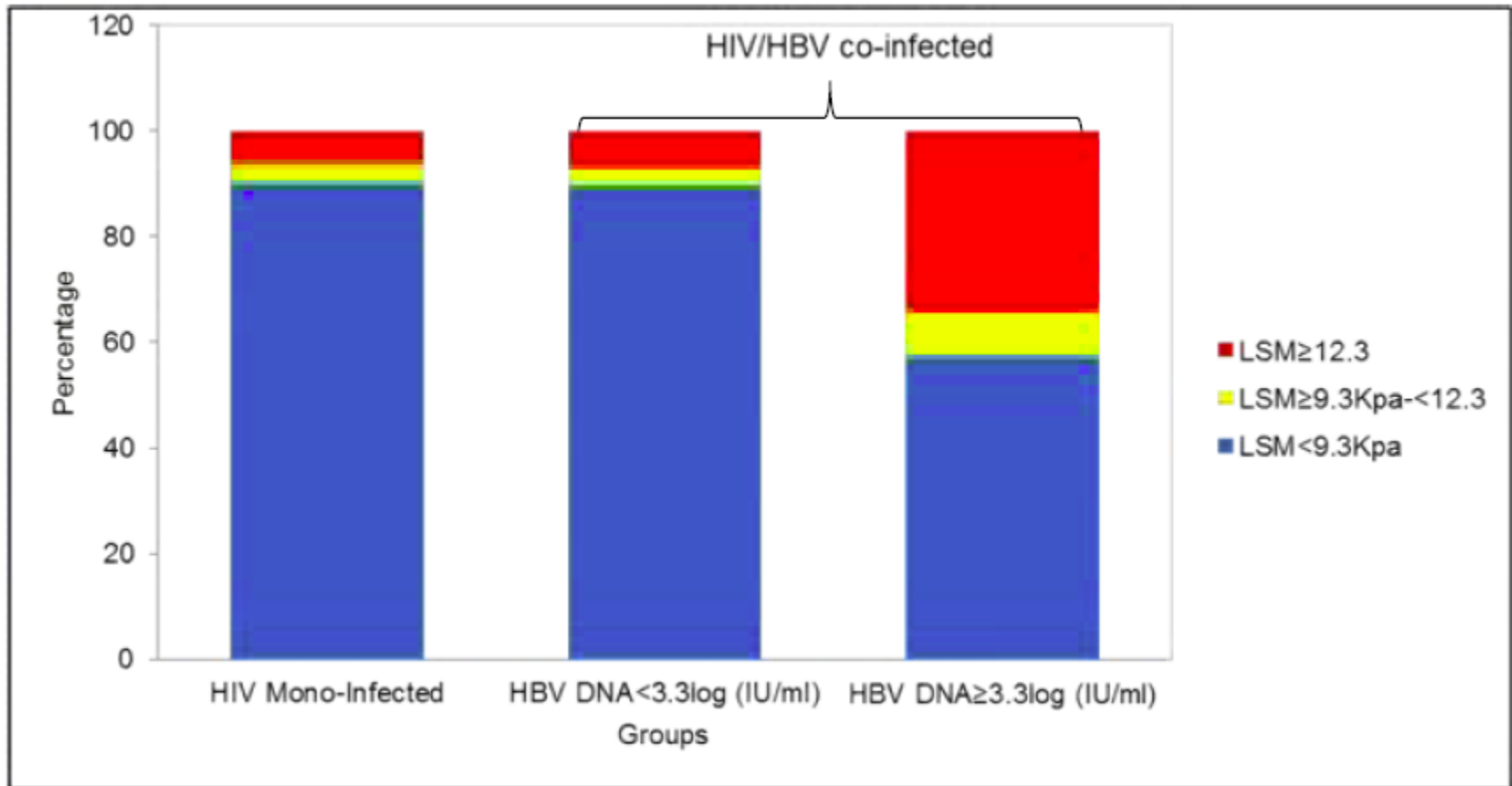
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Married				-
Current alcohol use			0.7)	0.78
ALT ≥30				-
BMI ≥25	0.48 (0.17,1.19)	0.09	0.50 (0.20, 1.23)	0.13
CD4 <200	1.55 (0.57-0.32)	0.31	0.99 (0.38, 2.53)	0.98

Conclusion:

HBV infection is a strong risk factor for liver fibrosis in untreated HIV-infected patients

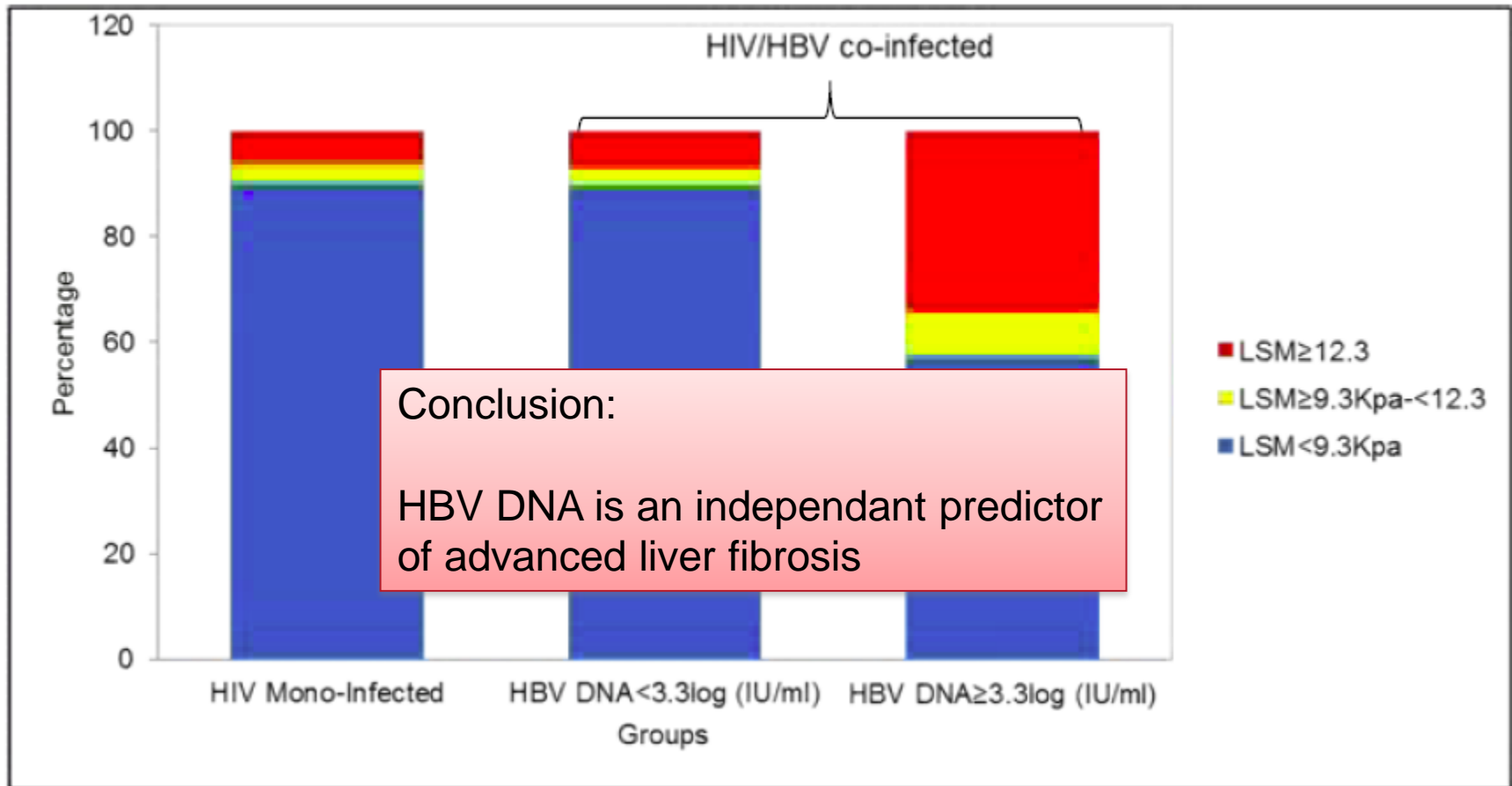
Liver fibrosis in HIV/HBV-coinfected Patients in Nigeria

Fig 3. Percentage of HIV/HBV co-infected patients with significant liver fibrosis and cirrhosis by HBV DNA level (log IU/mL)



Liver fibrosis in HIV/HBV-coinfected Patients in Nigeria

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