

HIV-Infected Patients with Hepatocellular Carcinoma (HCC) Live Longer if They Have Undetectable HIV RNA

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Background

- High HIV viral load in HIV/HCV-coinfected patients is associated with faster fibrosis progression.
- It is unknown if HIV viral load also affects the outcome of HCC

Methods

- Retrospective analysis in 29 centers in 7 countries (dark gray on map):

- North America: Canada and United States
- South America: Argentina and Brazil
- Europe: Germany, Spain and United Kingdom



Sites from countries in light gray are awaiting IRB/EC approval

- All HCC cases in HIV-infected patients from 1995-2010 with data on initial presentation.

N=159 total of 163 patients, of whom 4 had no HCV RNA data

- Diagnosis by AASLD criteria (Bruix & Sherman, Hepatology, 2005)

- Patients were divided into

Undetectable: HIV RNA <400 copies/ml n=98
Detectable: HIV RNA 400+ copies/ml n=61

Patient Characteristics

	HIV RNA <400 c/ml n=98	HIV RNA 400+ c/ml n=61	P
Age (yrs), Mean ± SD	51.4 (±7.9)	51.5 (±8.3)	0.96
Male Sex	63 (93%)	43 (92%)	1.00
Race/Ethnicity			0.12
White	52 (53%)	22 (36%)	
Black	32 (33%)	31 (51%)	
Latino	11 (11%)	7 (12%)	
Asian + other	3 (3%)	1 (2%)	
Time of HCC Diagnosis Date, Median	Apr-2004	Jan-2002	0.001
Etiology of HCC			0.66
Chronic Hepatitis C	70 (72%)	48 (79%)	
Chronic Hepatitis B	25 (26%)	12 (20%)	
Non-Viral (Alcohol, NASH)	2 (3.1%)	1 (1.6%)	
Excessive Alcohol Consumption	30 (33%)	28 (49%)	0.05
Child-Turcotte-Pugh Score, Mean ± SD	6.31	7.41	<0.001
Stage A	64 (65%)	25 (41%)	
Stage B	29 (30%)	25 (41%)	0.003
Stage C	5 (5%)	11 (18%)	
Prior HCC Screening	60 (61%)	25 (41%)	0.013
CD4+ Cells, Mean (per mcl)	319	320	0.13

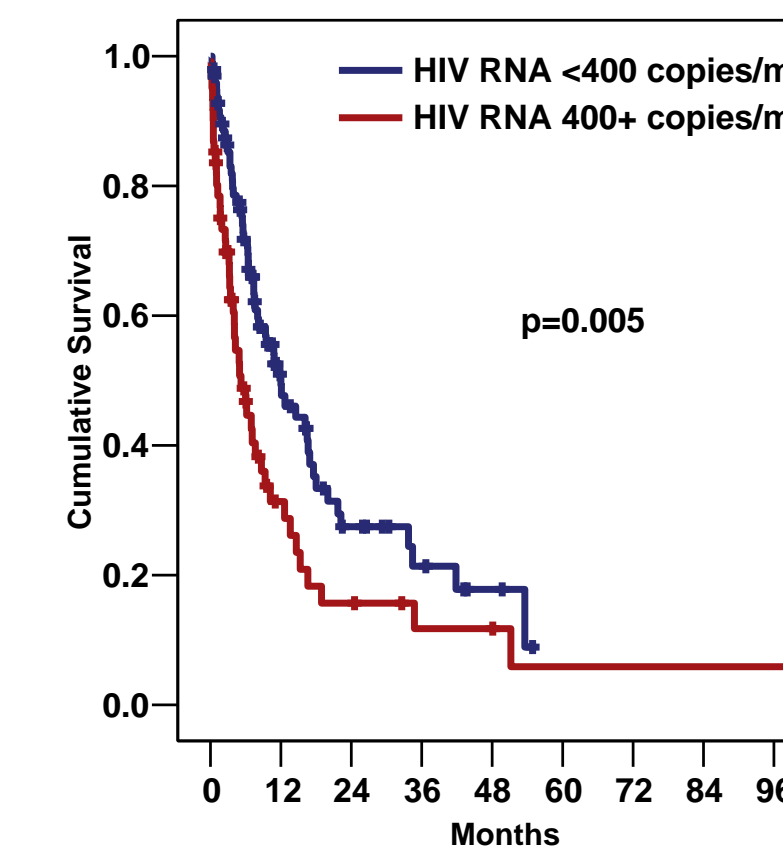
HCC Staging

	HIV RNA <400 c/ml n=98	HIV RNA 400+ c/ml n=61	P
BCLC Stage, n (%)			
A	36 (37%)	12 (20%)	
B	16 (16%)	17 (28%)	
C } Advanced,	36 (37%)	20 (33%)	0.034
D } Incurable	10 (10%)	12 (20%)	
CLIP Score, Mean ±SD	1.55 (±1.3)	2.42 (±1.4)	<0.001

HCC Therapy

	HIV RNA <400 c/ml n=98	HIV RNA 400+ c/ml n=61	P
Potentially Curative Therapy	37 (38%)	11 (18%)	
Radiofrequency Ablation (RFA)	16	6	
Ethanol Injections	6	4	
Surgical Resection	12	1	
Liver Transplantation	3	0	
Effective, Non-Curative Therapy	30 (31%)	12 (21%)	0.001
Transarterial Chemoembolization	21	11	
Sorafenib	9	2	
No Therapy	31 (32%)	37 (61%)	
Any Potentially Curative Therapy	37 (38%)	18 (19%)	0.008
Any Effective Therapy	67 (68%)	24 (39%)	0.001

Survival



Median survival

HIV RNA <400 c/ml 12.0 months
 HIV RNA 400+ c/ml 5.2 months

At Risk:
 HIV RNA <400 98 31 13 7 3
 HIV RNA 400+ 61 12 6 3 3 1 1 1

Multi-Variable Cox Regression Analysis of Survival

Factor	Univariate P	Multi-variable P	Multi-var. Hazard Ratio	95% Confidence Interval
Initial Presentation through Screening	<0.001	<0.001	3.02	1.8 – 5.0
BCLC stages A&B vs. C&D	<0.001	<0.001	2.48	1.6 – 4.0
Effective HCC Therapy	<0.001	<0.001	2.38	1.5 – 3.8
South America vs. Europe/North America	0.12	0.048	2.27	1.008 – 5.1
Diagnosis on or after Jan-2005	0.001	0.048	1.58	1.003 – 2.47
HIV RNA Level (per log ₁₀ copies/ml)	<0.001	0.003	1.25	1.07 – 1.46
Age (per 10 years)	0.057	NS		
CD4+ Cells (per 100/mm ³)	0.038	NS		

HCC Tumor Characteristics

	HIV RNA <400 c/ml n=98	HIV RNA 400+ c/ml n=61	P
Hepatic Lesions			0.32
Solitary Tumors	54 (55%)	28 (46%)	
Multiple tumors	35 (36%)	29 (47%)	
Diffusely Infiltrative Tumors	9 (9%)	4 (7%)	
Median Size Largest Lesion (cm), Range	3.6 (0.5-18)	5.8 (1.5-20)	0.002
Portal Vein Thrombosis	18 (18%)	13 (21%)	0.65
Extrahepatic Metastases	15 (15%)	9 (15%)	0.93
AFP level			0.016
Median (ng/ml)	197	907	
Normal (≤ ULN)	12 (13%)	6 (10%)	0.546

Summary and Conclusion

HIV RNA (<400 copies/ml) is associated with

- 1) Lower CTP score
- 2) More frequent presentation via screening.
- 3) Earlier tumor staging.
- 4) More frequent HCC Therapy.
- 5) Better survival (independently correlated)

* This abstract is dedicated to Edmund J. Bini, MD, MPH (1967 – 2010), who contributed greatly to this study, and who would have been a co-author



To contribute your cases of HCC in HIV patients for further studies, please contact: Norbert Bräu
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