

# Continental Differences of HCC in HIV-Infected Patients. A Pilot Study Comparing North America & Europe



**Rafiullah<sup>1,2</sup>, E. Palys<sup>3</sup>, D. E. Kaplan<sup>4</sup>, N. Qazi<sup>5</sup>, N. Merchante<sup>6</sup>, R. Mata<sup>6</sup>, M. Márquez<sup>7</sup>, M. E. Vispo<sup>8</sup>, M. Vogel<sup>9</sup>, E. Page<sup>10</sup>, S. Mauss<sup>11</sup>, F. Berger<sup>11</sup>, M. Goetz<sup>12</sup>, D. Rimland<sup>13</sup>, M. Núñez<sup>14</sup>, P. M. Barreiro<sup>8</sup>, J. A. Pineda<sup>6</sup>, H. Klinker<sup>15</sup>, J. Rockstroh<sup>9</sup>, M. Nelson<sup>10</sup>, M. Sherman<sup>16</sup>, N. Bräu<sup>1,2</sup>. The Liver Cancer in HIV Study Group\***

<sup>1</sup>Bronx VA Medical Center, Bronx, NY, <sup>2</sup>Mount Sinai School of Medicine, New York, NY, <sup>3</sup>Cedars Sinai Medical Center, Los Angeles, CA, <sup>4</sup>Philadelphia VA Medical Center, Philadelphia, PA, <sup>5</sup>Washington VA Medical Center, Washington, DC, United States, <sup>6</sup>Hospital Universitario de Valme, Sevilla, <sup>7</sup>Hospital Virgen de la Victoria, Malaga, <sup>8</sup>Hospital Carlos III, Madrid, Spain, <sup>9</sup>Universitätsklinikum Bonn, Bonn, Germany, <sup>10</sup>Chelsea & Westminster Hospital, London, United Kingdom, <sup>11</sup>Düsseldorf Center for HIV & HepatoGastroenterology, HIV Research, Düsseldorf, Germany, <sup>12</sup>VA Greater Los Angeles HCS, Los Angeles, CA, <sup>13</sup>Atlanta VA Medical Center, Atlanta, GA, <sup>14</sup>Wake Forest University, Winston-Salem, NC, United States, <sup>15</sup>Universitätsklinikum Würzburg, Würzburg, Germany, <sup>16</sup>University of Toronto, Toronto, ON, Canada

## Background

- Cases of HCC in HIV-infected patients have been reported with increasing frequency.
- It is unknown if there are differences between continents.

## Methods

- Retrospective analysis in 29 centers in 5 countries

**North America (NA) n=113**  
Canada and United States

**Europe (EU) n=27**  
Germany, Spain and United Kingdom

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

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

## Patient Characteristics

	North America n=113	Europe n=27	P
Age (yrs), Mean ± SD	53.2 (±8.1)	48.7 (±8.9)	0.021
Male Sex	108 (95.6%)	25 (92.6%)	0.62
Time of HCC Diagnosis Date, Median	Apr-2004	Dec-2005	0.020
Etiology of HCC			
Chronic Hepatitis C	84 (74.3%)	21 (77.8%)	0.69
Chronic Hepatitis B	26 (23.0%)	6 (22.2%)	
Non-Viral (Alcohol, NASH)	3 (2.7%)	0	
Alcohol Consumption			
None	25 (23.1%)	9 (42.9%)	0.17
Moderate	38 (35.2%)	5 (23.8%)	
Excessive	45 (41.7%)	7 (33.3%)	
Liver Function			
Child-Turcotte-Pugh Score, Mean ±SD	6.76	6.74	0.96
Stage A	61 (54.5%)	16 (59.3%)	0.194
Stage B	41 (36.6%)	6 (22.2%)	
Stage C	10 (8.9%)	5 (18.5%)	
HCC Diagnosed via Screening (AFP or Imaging)	52 (46.4%)	18 (66.7%)	0.059
HIV parameter, Mean (range)			
CD4+ Cells (per mm <sup>3</sup> )	334	308	0.57
Log <sub>10</sub> HIV RNA Level	2.70	2.14	0.065

## HCC Tumor Characteristics

	North America n=113	Europe n=27	P
Hepatic Lesions			
Solitary Tumors	54 (48.2%)	13 (48.1%)	0.87
Multiple tumors	49 (43.8%)	11 (40.7%)	
Diffusely Infiltrative Tumors	9 (8.0%)	3 (11.1%)	
Median Size Largest Lesion (cm), Range	4.25 (1.2 – 20)	4.0 (.5 – 10.8)	0.31
Portal Vein Thrombosis	20 (17.7%)	4 (14.8%)	0.83
Extrahepatic Metastases	14 (12.5%)	6 (22.2%)	0.20
AFP level (ng/ml)			
Median	363	286	1.00
Normal (≤ ULN)	12 (11.4%)	2 (8.7%)	1.00

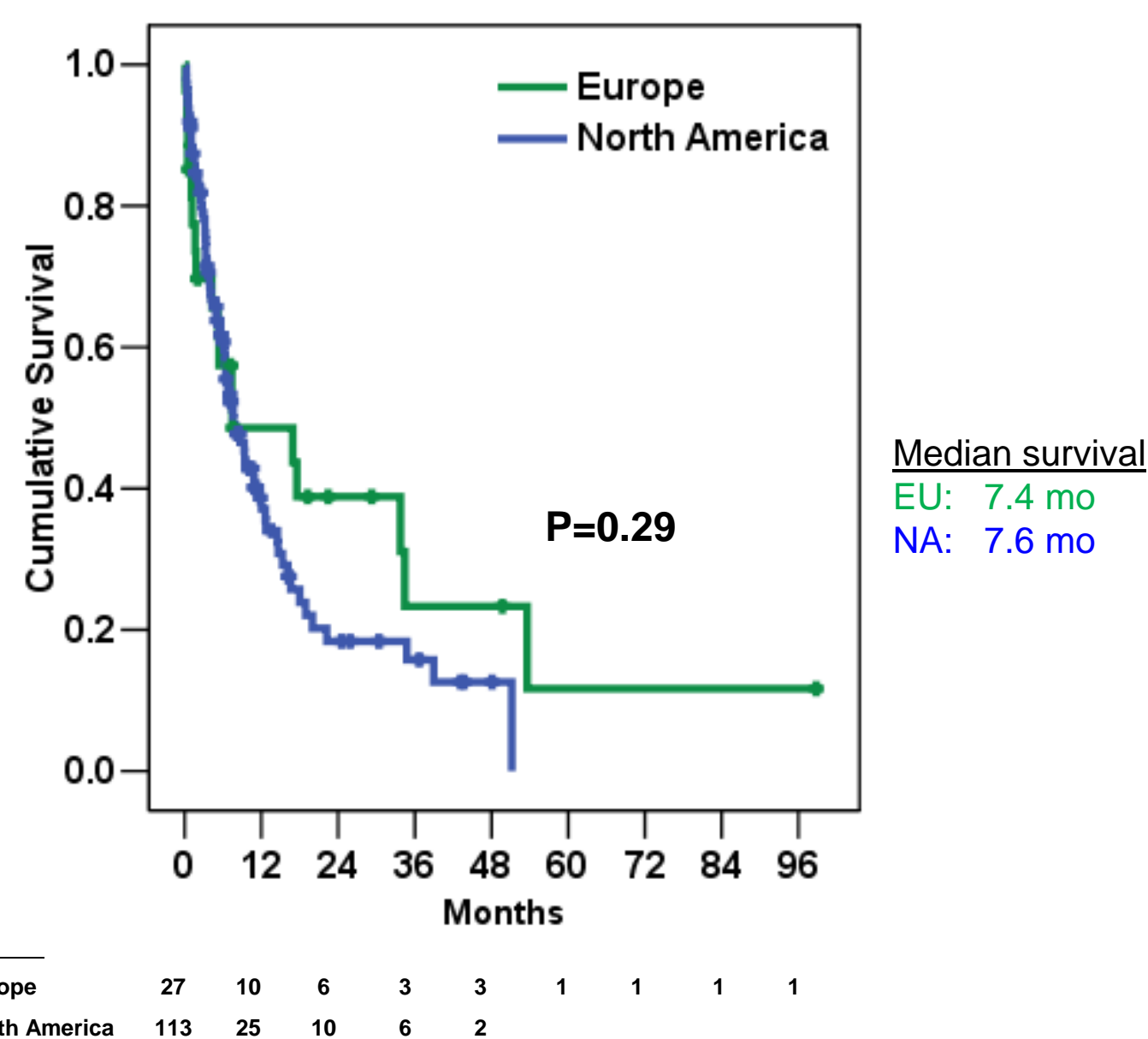
## HCC Staging

	North America n=113	Europe n=27	P
BCLC Stage, n (%)			
A	34 (30.4%)	6 (22.2%)	0.13
B	26 (23.2%)	6 (22.2%)	
C } Advanced,	39 (34.8%)	7 (25.9%)	
D } Incurable	13 (11.6%)	8 (29.6%)	
BCLC Stages C and D	52 (46.4%)	15 (55.6%)	0.39
CLIP Score, Mean ±SD	1.93 (±1.3)	2.04 (±1.9)	0.80

## HCC Therapy

	North America n=113	Europe n=27	P
Potentially Curative Therapy	35 (31.0%)	8 (29.8%)	0.64
Radiofrequency Ablation (RFA)	21	0	
Ethanol Injections	6	3	
Surgical Resection	7	4	
Liver Transplantation	1	1	
Effective, Non-Curative Therapy	28 (24.8%)	9 (33.3%)	
Transarterial Chemoembolization	25	8	
Sorafenib	3	1	
No Therapy	50 (44.2%)	10 (37.0%)	

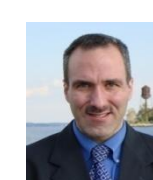
## Survival



## Summary and Conclusion

- North American patients are older than European patients
- NA patients are being detected less often through screening
- NA patients have slightly higher HIV viral loads than EU patients.
- A Bonferroni adjustment for multiple comparisons was not performed in this study, hence the few differences seen may not be significant.
- HCC staging, therapy, and survival are similar between the two continents.

\* 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 [norbert.brau@va.gov](mailto:norbert.brau@va.gov) Tel: (+1) 917-701-3867 or visit us at [www.HCCinHIV.org](http://www.HCCinHIV.org)