Survival After End-Stage Liver Disease in Adults With HIV: Data from The NA-ACCORD

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Abstract #624

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Introduction

- End-Stage Liver Disease (ESLD) is one of the leading causes of morbidity and mortality among adults world-wide
- Infection with HIV, hepatitis B (HBV) and hepatitis C viruses (HCV) worsens the progression of liver disease and its subsequent complications
- With better access to care and improvements in therapy, HIV-infected individuals are living long enough to develop the chronic complications of liver disease
- Our objective was to assess the differences in survival after ESLD among adults with HIV infection according to the presence of HBV and HCV coinfection

Methods

Study Population

- 299 adults from 12 participating NA-ACCORD cohorts with a validated ESLD diagnosis between Jan 2000 and Dec 2009

Measurements

- Demographic and clinical parameters including HIV transmission risk, HIV RNA measurements, CD4 cell count, HBV and HCV infection status, combination antiretroviral therapy (cART), smoking and alcohol use were evaluated at ESLD diagnosis

Statistical Analyses

- Participants were followed from ESLD diagnosis to death, loss to follow up, or administrative censoring, whichever came first
  - ESLD outcomes were validated using medical records and a previously published protocol
  - Death was ascertained from the national death index and Social Security Death Registry
  - Loss to follow up was defined as 1.5 years after last CD4 or HIV RNA measurement.
  - Administrative censoring was 5 years after ESLD diagnosis
- Multivariable pooled logistic regression models were use to assess the hazards odds (relative risk) of death after ESLD comparing participants with HIV monoinfection to those with HIV and hepatitis B and C coinfections
- Kaplan Meier estimates of survival were plotted overall and stratified by HIV RNA suppression status
- Triply infected individuals(with HIV, HBV & HCV) were excluded from analyses due to small sample size (n=27).

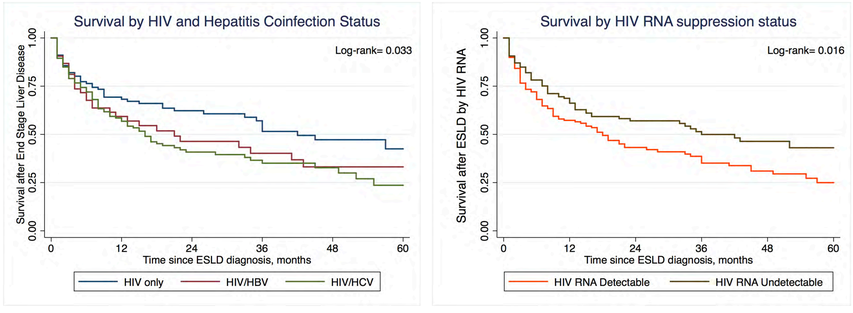
Results

Table 1: Characteristics of Participants at ESLD diagnosis by HIV, HBV and HCV coinfection status (N=299)

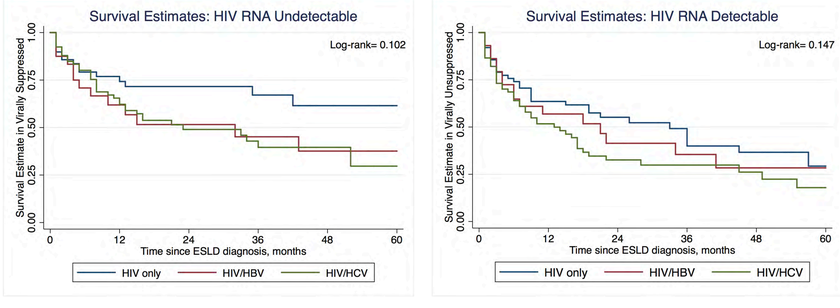
Characteristic	HIV only n=112 (37%)	HIV & HBV n=53 (18%)	HIV & HCV n=133 (45%)	p-value
Age (years)	48.3 (±10.2)	47.3 (±7.1)	48.2 (±7.3)	**0.01**
Sex (Female)	22 (20)	1 (2)	22 (17)	**0.01**
Race/Ethnicity				**0.04**
White	54 (48)	32 (60)	61 (46)	
Back	32 (30)	11 (20)	50 (38)	
Hispanic	20 (17)	4 (8)	11 (8)	
Other/unknown	6 (5)	6 (11)	11 (8)	
HIV transmission risk				**<0.001**
Heterosexual	40 (36)	6 (12)	25 (19)	
MSM	50 (44)	41 (77)	37 (28)	
IDU	12 (11)	3 (6)	61 (46)	
Other/unknown	10 (9)	3 (6)	10 (7)	
Deaths after ESLD	48 (43)	30 (57)	81 (61)	**0.02**
CD4 count (cells/mm^3)				0.12
<200	63 (55)	25 (48)	53 (40)	
200-499	37 (33)	23 (43)	59 (44)	
>500	12 (11)	5 (9)	21 (16)	
HIV RNA (copies/ml)				0.64
Suppressed (≤200)	49 (44)	24 (44)	66 (50)	
Unsuppressed (>200)	63 (56)	29 (56)	67 (50)	
Antiretroviral Therapy				0.07
None	48 (43)	24 (45)	63 (47)	
NNRTI-based	23 (21)	5 (9)	20 (15)	
PI-based	24 (21)	20 (38)	41 (31)	
Other regimen	17 (15)	4 (8)	9 (7)	
Log Platelet Count	5.07 (±0.71)	4.69 (±0.54)	4.66 (±0.59)	**<0.001**
At-risk alcohol use	51 (46)	23 (44)	76 (57)	0.29
Cigarette smoking	67 (60)	36 (69)	108 (81)	**0.01**

Data are reported as n(%) or as median ±(SD). Statistically significant values are in bold text and assessed as p<0.05 using Pearson X^2, ANOVA and kruskal-wallis tests where appropriate

Mortality After ESLD by HIV and Hepatitis coinfection status and by HIV RNA suppression status among all participants (n=299)



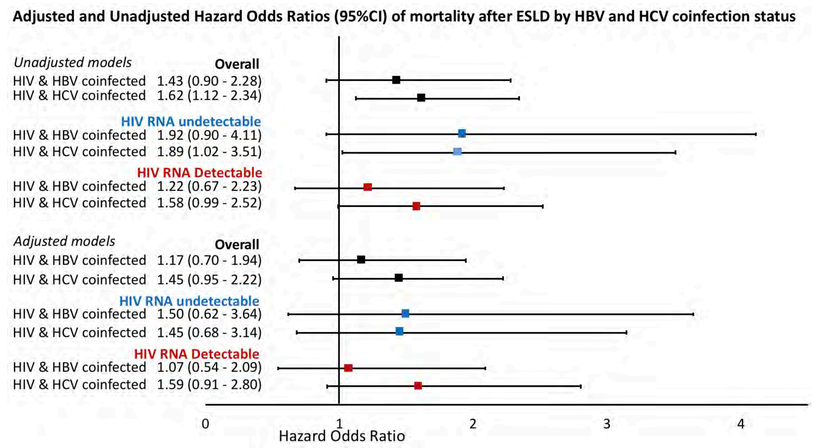
Kaplan Meier plots of mortality after ESLD comparing HIV only, HIV/HBV and HIV/HCV groups stratified by baseline HIV RNA suppression status



Survival among participants by with undetectable HIV RNA (n=117) at ESLD diagnosis

Survival among participants with detectable HIV RNA (n=182) at ESLD diagnosis

Hazard Odds Ratios of Mortality by and HIV/HCV groups and stratified by HIV RNA suppression status



- HIV monoinfected serve as the reference group (HOR =1)
- These hazard odds ratios (relative risks) were obtained following multivariable pooled logistic regression analyses
- Unadjusted estimates were assessed overall and by HIV RNA suppression status
- Adjusted estimates were obtained after taking into account calendar time, age race, gender, log platelet count, smoking status, at-risk alcohol use and study site.
- At-risk alcohol use was defined as 7 or more drinks weekly for women and 14 or more drinks weekly for men.

Cause of death among n=84 participants

- Among participants (n=84) with verified data available on the cause of death, 30 % had Liver related diagnosis listed as an immediate or contributing cause of death

Conclusions

- There is a higher mortality risk following ESLD for HIV infected participants coinfected with HBV or HCV compared to those with HIV monoinfection
- These results are also suggestive of increased survival among participants with HIV viral suppression after ESLD
- This study underscores the importance of early detection and treatment of HIV to attain viral suppression
- Aggressive treatment of hepatitis B and C among HIV-infected individuals may result in better long-term outcomes following ESLD diagnosis

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