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Hepatitis C infection and Cognition in Older HIV+ Adults: Data from the Center of Excellence on Disparities in HIV and Aging (CEDHA)

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CEDHA RUSH CENTER OF EXCELLENCE ON DISPARITIES IN HIV & AGING

Background

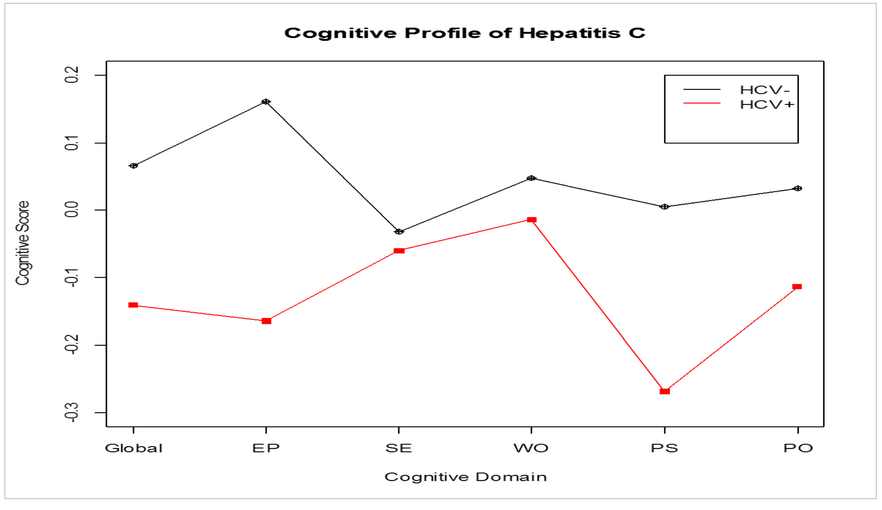
- Neurocognitive impairment in patients with controlled HIV is well reported.
- Chronic hepatitis C (HCV) has also been associated with poor neurocognitive and neuropsychiatric outcomes in patients without HIV and small studies of patients with advanced HIV/AIDS.
- We sought to evaluate the impact of HCV co-infection on neurocognition and quality of life (QOL) among older adults with well controlled HIV infection enrolled in the Research Core of the Center of Excellence on Disparities in HIV and Aging (CEDHA).

Methods

- CEDHA is a prospective study of older adults with and without HIV living in Chicago IL
- Data on 166 HIV+ participants (94% of target) enrolled Jan 2013 - July 2014
- Participants could not have active drug or alcohol use
- Also excluded were subjects with a history of known dementia, strokes or other neurodegenerative conditions or brain tumors
- Participants completed a structured clinical evaluation including a battery of 19 cognitive tests and 3 quality of life questions
- Cognitive data included composite measures of a 19-item global cognition score and five different cognitive domains:
  - (1) episodic memory
  - (2) semantic memory
  - (3) working memory
  - (4) perceptual speed
  - (5) visuospatial ability
- Global and specific domain scores were computed by converting raw scores on each component to z scores and computing an average score
- Linear regression models were used to examine the relationship between HCV infection and neurocognition, and logistic regression models were used to examine the association of HCV with quality of life

Results

Variable	All participants (n=166)	HIV+/HCV+ (n=64)	HIV+/HCV- (n=102)	P value
Age, mean (SD)	58 yrs (±5.5)	59 .4 (±5.3)	57.8 (±5.5)	P=0.0604
Black, n (%) White, n (%)	115 (69%) 51 (31%)	52 (82%) 12 (18%)	62 (61%) 40 (39%)	p=0.009
Male (%)	124 (75%)	73%	76%	p=0.6181
Education, yrs mean (SD)	13.1 (±2.8)	12.0 (±2.6)	13.8 (±2.7)	p<0.0001
HIV duration, yrs (med, quartiles)	17.2 (±7.3)	17 (12, 22)	17 (12, 22)	P=0.7969
CD4 count, mean (SD)	621 (±286)	575 (±261)	650 (±297)	P=0.1029
% Undetectable HIV RNA	97%	96%	98%	P=0.0968
Nadir CD4 count, mean (SD)	260.2 (± 172.2)	227 (±160)	280 (±177)	P=0.0777
Hypertension	90 (54%)	33 (52%)	57 (56%)	P=0.5868
Diabetes Mellitus	25 (15%)	9 (14%)	16 (16%)	P=0.77
Heart disease	17 (10%)	8 (12.5%)	9 (8.8%)	p=0.58
Lifetime daily alcohol use	0.73 (±1.66)	0.98 (±1.97)	0.58 (±1.42)	P=0.15
History of IDU	52 (31%)	45 (70%)	7 (%)	P<0.001
Quality of life Good to excellent , n (%) Fair, n (%)	 101 (61%) 56 (34%)	 29. (45%) 30. (45%)	 72 (71%) 27 (27%)	P<0.001
CES-D score (10-item)	2.65 (±2.48)	2.73 (±2.37)	2.60 (±2.56)	P=0.7506



Profile in a 58 year old HIV+ black male with or without HCV

Association Between HCV, Cognition and Quality of Life HIV+ CEDHA participants (n=166)*	
HCV	1.00000
19 Item Global Cognition Score	**-0.34869** <.0001
Episodic Memory (EP)	**-0.36392** <.0001
Semantic Memory (SE)	**-0.19708** 0.0109
Working Memory (WO)	-0.12721 0.1024
Perceptual Speed (PS)	**-0.30710** <.0001
Visuospatial Ability(PO)	**-0.20692** 0.0075
Quality of life (QOL)	**0.30706** <.0001

* In Multivariable analysis controlling for; Age, race, education, and nadir CD4 count, only episodic memory and quality of life remained significantly associated with HCV infection.

Conclusions

- HCV infection is associated with poorer cognition, (specifically episodic memory) and quality of life (QOL) in patients with well controlled HIV
- These impairments may have adverse effects on adherence and other longterm outcomes in HIV patients
- Nadir CD4 attenuates the association between cognition and HCV status supporting the role of earlier initiation of HIV therapy on a myriad of outcomes
- The effect of HCV cure on these cognitive and QOL outcomes needs further exploration

Acknowledgements

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