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Protective Effect of Coffee Intake on Mortality of French HIV-HCV-Infected Patients

(ANRS CO13 HEPAVIH Cohort)

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Background

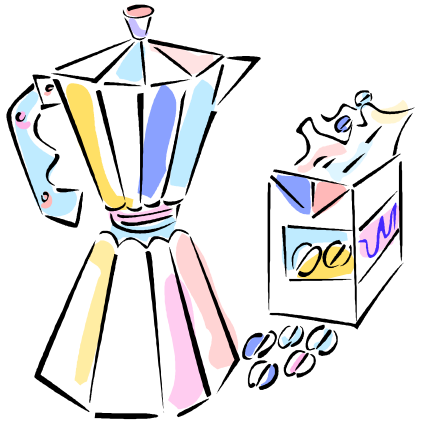
Coffee in HIV-HCV co-infected patients :

- Hepato-protective properties of polyphenols
- Elevated coffee consumption (3 or more cups/day) is associated with :
  - reduced self-reported side effects *(Carrieri et al, J HEPATOL 2012)*
  - reduced risk of insulin resistance *(Carrieri et al, HEPATOLOGY 2012)*
  - lower levels of liver enzymes *(Carrieri et al, J HEPATOL 2014)*

Association between coffee and overall mortality is unknown in co-infected patients.

Objective of the study

This study aimed to investigate the effect of coffee consumption and other behaviors on mortality risk in the HIV-HCV co-infected patients of the ANRS CO13 HEPAVIH cohort.



Methods (1/3)

The ANRS CO13 HEPAVIH cohort:

- French nationwide prospective cohort, started in 2006
- HEPAVIH enrolled 1,246 HIV-HCV co-infected adults from 21 centres, representative of the French co-infected people and in care
- Medical and psycho-social/behavioral data collection using self-administered questionnaires at enrolment (M0) and every 12 months thereafter until M60 (annual standard visits)

Methods (2/3)

Selection of patients:

- having at least one available completed self-administered questionnaire between M0-M60 and
- having a latest news date > the date of the first available self-administered questionnaire

Selection of the study period:

- from the first available self-administered questionnaire until the latest news date or death, censored at 12 months after the last standard visit available in the database

Methods (3/3)

Statistical analysis:

- Cox proportional hazards model with robust standard errors
- Backward selection procedure in the final multivariate model ($P \leq 0.05$, Wald test) & gender adjustment

Outcome variable:

- Deaths from all causes occurring between M0 and M72

Explanatory variables:

- In the case of a missing value for a time-varying covariate, the last available value before the current visit was carried forward.

Results (1/2)

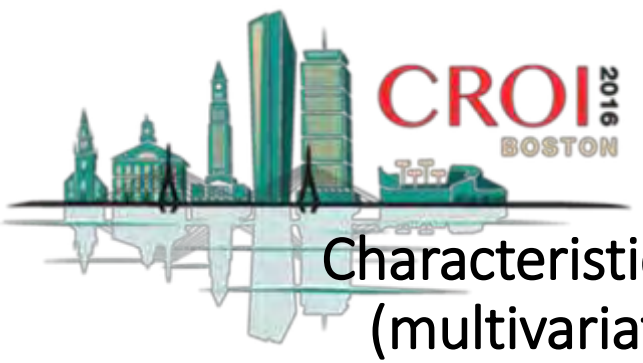
- N=1,035 patients eligible for this study
- Median [interquartile range] follow-up duration: 5 [3.9-5.8] years, representing 4,693 person-years
- n=77 deaths occurred among the 1,035 eligible patients
- Mortality incidence rate [95% confidence interval]: 1.64 [1.31-2.05] per 100 person-years

Results (2/2)

Causes of deaths	n (%)
HCV-related (including hepatocellular carcinoma)	33 (42.8)
Unknown	11 (14.3)
Non AIDS-related/non HCV-related cancer	9 (11.7)
AIDS-related	8 (10.4)
Cardiovascular disease	3 (3.9)
Overdose	3 (3.9)
Suicide	3 (3.9)
Respiratory diseases	2 (2.6)
Unexplained sudden death	2 (2.6)
Infectious and parasitic diseases	1 (1.3)
Digestive diseases	1 (1.3)
Endocrine, nutritional and metabolic diseases	1 (1.3)
Total	**77 (100)**

Characteristics of the study population and factors associated with mortality (multivariate analysis, ANRS CO13 HEPAVIH cohort, n=1,035)

	N (%) §	n deaths	AHR [95% CI]	P-value
Gender				
Male	726 (70.1)	61	1	
Female	309 (29.9)	16	0.6 [0.3-1.0]	0.060
Having a steady partner §				
No	399 (38.5)	40	1	
Yes	631 (61.0)	37	0.6 [0.3-0.9]	0.014
Precarious housing §				
No	1,013 (97.9)	71	1	
Yes	18 (1.7)	6	3.7 [1.9-7.2]	$<10^{-3}$
HCV treatment status §				
Not yet treated	551 (53.2)	58	1	
Ongoing treatment	73 (7.0)	7	0.9 [0.4-1.9]	0.753
Treated and not cured	163 (15.7)	8	0.7 [0.3-1.4]	0.289
Treated and cured	248 (24.0)	4	0.2 [0.1-0.6]	0.004



Characteristics of the study population and factors associated with mortality (multivariate analysis, ANRS CO13 HEPAVIH cohort, n=1,035) - continued

	N (%) §	n deaths	AHR [95% CI]	P-value
HIV stage §				
1	462 (44.6)	18	1	
2	269 (26.0)	21	2.0 [1.0-4.0]	0.036
3	301 (29.1)	37	3.2 [1.8-5.7]	$<10^{-3}$
CD4+ cell count/mm^3 ≤ 200 §				
No	951 (91.9)	58	1	
Yes	84 (8.1)	19	3.2 [1.9-5.5]	$<10^{-3}$
Tobacco consumption §				
Past/current	905 (87.4)	73	1	
Never	122 (11.8)	3	0.3 [0.1-0.9]	0.039
Alcohol consumption § (AU/day)				
No consumption	325 (31.4)	27	1	
Low (≤ 1)	477 (46.1)	25	0.5 [0.3-0.9]	0.033
Moderate (> 1 and ≤ 4(3) for men(women))	161 (15.6)	14	0.7 [0.3-1.3]	0.228
Elevated (> 4(3) for men(women))	61 (5.9)	9	1.0 [0.4-2.4]	0.912

Characteristics of the study population and factors associated with mortality (multivariate analysis, ANRS CO13 HEPAVIH cohort, n=1,035) - continued

	N (%) §	n deaths	AHR [95% CI]	P-value
Coffee consumption §				
< 3 cups/day	762 (73.6)	65	1	
≥ 3 cups/day	272 (26.3)	12	0.5 [0.3-1.0]	0.045

AHR=adjusted hazard ratio; AU=alcohol units; CI=confidence interval

§ Time-varying variable, descriptive statistics are given at last available visit of each patient

Conclusions

- **This study indicates a possible protective effect of elevated coffee intake on mortality in HIV-HCV co-infected patients.**
- This association is independent of HIV immunological status and HCV clearance.
- This effect may be mediated by coffee compounds having anti-inflammatory and anti-fibrotic properties
- These results underline the need of evaluating the benefits of coffee extracts and supplementing dietary intake of other anti-inflammatory compounds in this population.

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