The Association Between Heavy Alcohol Consumption and Trimethylamine N-Oxide

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Introduction

- Alcohol and HIV are independently associated with intestinal microbiome changes.

- Trimethylamine-n-oxide (TMAO), a proatherogenic molecule, is impacted by changes in the intestinal microbiome.

- The association between alcohol and TMAO in PWH is unclear.
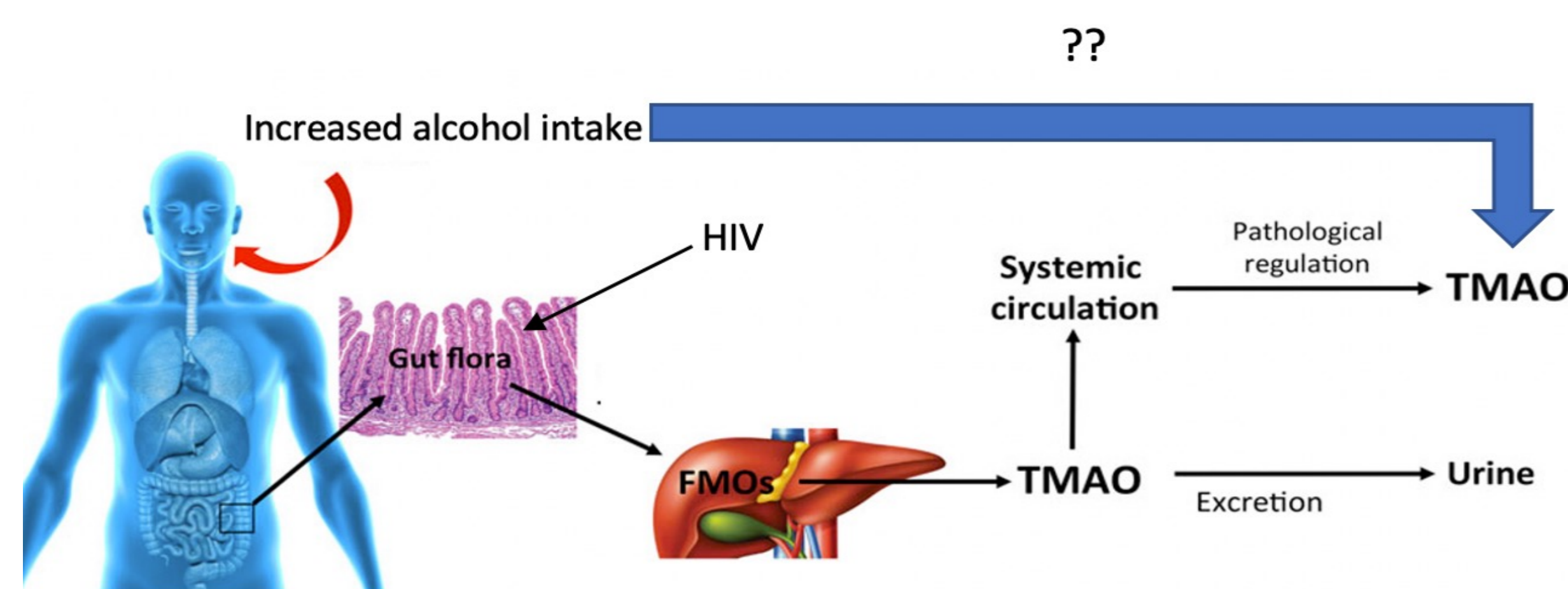
Results

Table 1: Baseline Characteristics of Participants in the Cross-Sectional Plasma TMAO Heavy Alcohol Study from 2017-2019,St Petersburg, Russia.

Baseline Characteristics		Mean± SD OR n (%)
Demographics	Age*(years)*	39 ± 6
	Gender *(Female)*	137 (34)
	BMI *(kg/m^2)*	22 ± 3
HIV Related	CD4 count	391 ± 257
	Log$_{10}$HIV viral load	3 ± 1
	Years since first positive HIV test	11 (6)
TMAO related	eGFR*(ml/min/1.73m^2)*	95 ± 30
	Seafood consumption the day before*(yes)*	76 (19)
Alcohol	Number of heavy drinking days *(median, interquartile range)*	8 (6 -10)

Table 2: Linear Regression Analyses Evaluating the Association Between Number of Heavy Drinking Days and Plasma TMAO Levels(n=725).

	Effect size	95% CI	p-value
Number of heavy drinking days	1.003	0.994, 1.013	0.530
Age	1.014	1.002, 1.027	0.028
Female	1.010	0.859, 1.186	0.907
BMI	1.017	0.995, 1.042	0.135
Renal Function (eGFR)	0.997	0.994, 0.999	0.041
log10_HIV Viral Load	0.999	0.949, 1.053	0.982
Recent seafood Intake	1.661	1.418, 1.947	<0.001

Methods & Objectives

- We measured TMAO levels at baseline (n-400) and at 3-months (n-325) in PWH enrolled in the St PETER HIV RCT.

- Heavy drinking day was defined as intake of >3 for women or >4 standard drinks for men.

- General additive model used to determine the shape of association between number of heavy drinking days and plasma TMAO levels.

- Mixed effect model used to account for repeated measures.
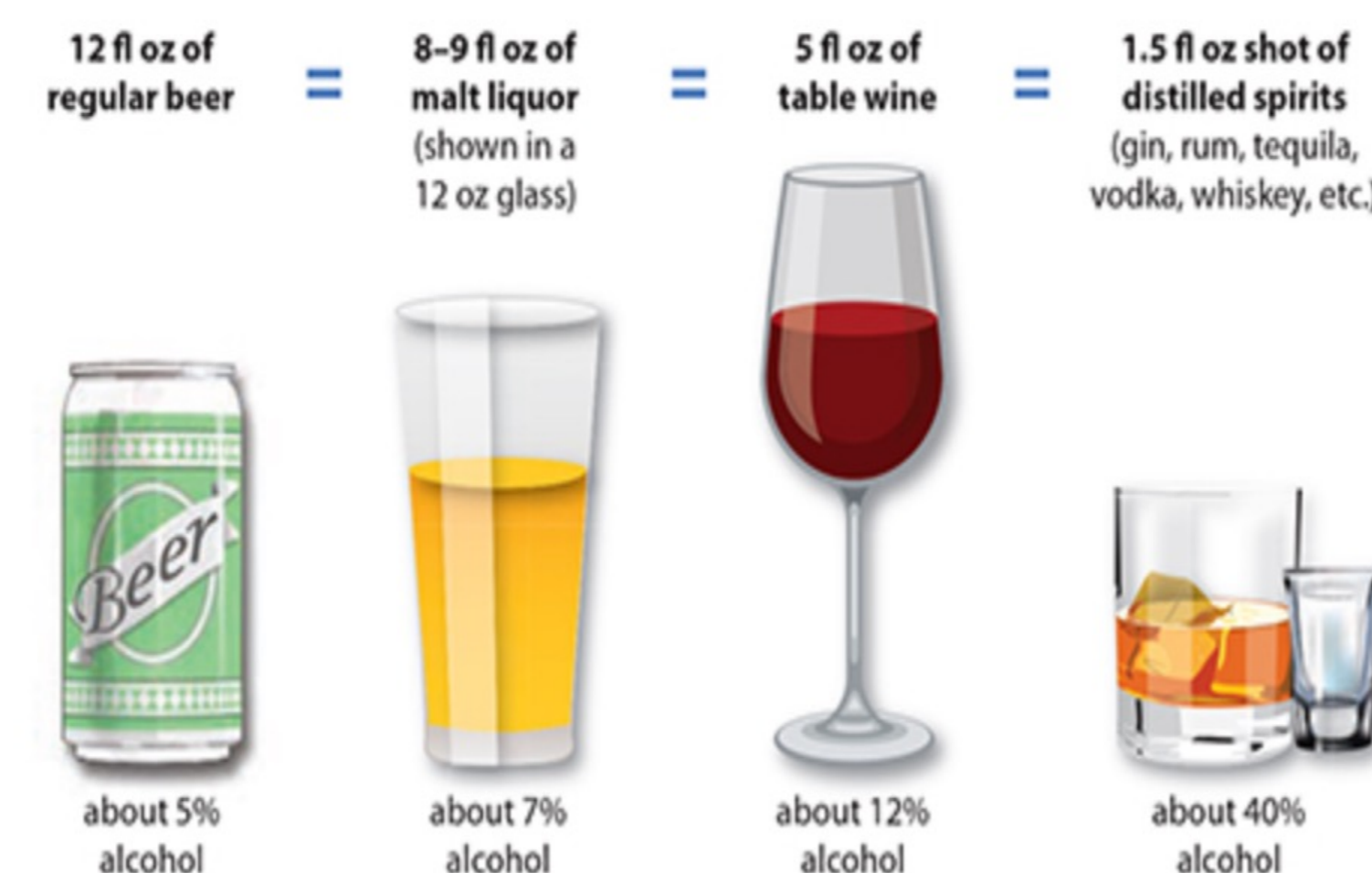
Source: National Institute on Alcohol Abuse & Alcoholism

Conclusion

- We did not detect an association between number of heavy drinking days and TMAO levels in this sample of PWH with heavy alcohol use.

- Our study, St PETER HIV, which is a longitudinal study, has the opportunity to investigate the effects of alcohol and smoking reduction on TMAO levels over time.

Acknowledgements and References