Liver inflammation is common and linked to metabolic derangements in treated HIV

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Background and Objectives

- Abnormal serum liver enzymes in people with HIV (PWH) are common and frequently unexplained
- Nonalcoholic fatty liver disease (NAFLD) and drug toxicity are possible etiologies
- Previous studies suggest the prevalence of NAFLD is 13-67% in HIV cohorts and up to >70% amongst PWH who have unexplained transaminase elevation

Objectives:

To determine the prevalence of and reasons for hepatic transaminase elevation in a cohort of adults with treated HIV without hepatitis B or C virus infection or heavy alcohol use

Figure 1: Cohort Selection and AST/ALT Characterization

Table 1: Baseline Characteristics by AST/ALT Elevation

Table 2: Independent Predictors of Transaminase Elevation

Conclusions

- Liver enzyme elevation in the absence of HIV infection, chronic HBV infection, or heavy alcohol use is very common (two-thirds by single elevation, one-third by two consecutive elevations) in this PWH cohort, suggesting a high rate of untreated liver injury/inflammation
- Transaminase elevation is associated with female sex, Hispanic ethnicity, higher CD4 and albumin levels, elevated triglycerides, and elevated blood pressure, consistent with findings from other demographic studies and metabolic associations with NAFLD
- The CD4 association was lost with a stricter definition of AST/ALT elevation (2+ elevations), suggesting metabolic abnormalities are a stronger driver of liver disease development than HIV-related factors, but it is unknown if HIV-related variables (e.g. ART effects) may mediate metabolic dysregulation
- Higher Hepatitis Steatosis Index was consistently associated with transaminase elevation, suggesting NAFLD may be a common cause of liver inflammation in PWH receiving suppressive ART
- The diagnosis of NAFLD in our cohort is limited given the absence of imaging or biopsy
- Future research is needed to understand the contribution of NAFLD and other mechanisms of liver injury in PWH on suppressive ART, and design interventions to reduce liver injury and liver-associated complications

Acknowledgements

Contact Information:
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Figure 2A and 2B: Independent Predictors of Transaminase Elevation

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