



29th Annual Canadian Conference on
HIV / AIDS Research

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Prevalence, Predictors and Evolution of Lean Non-alcoholic Fatty Liver Disease in HIV Mono-infected Patients

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Objective

The burden of NAFLD is growing in people living with HIV.

NAFLD is usually associated with obesity, however **it can occur in normoweight (lean) patients.**

We aimed to investigate prevalence, predictors and evolution of lean NAFLD in HIV mono-infected patients

Methods

We included HIV mono-infected patients from three prospective cohorts (LHIVE in Montreal; LHIVPA in Palermo and MHMC in Modena, Italy).

All patients underwent transient elastography (TE):

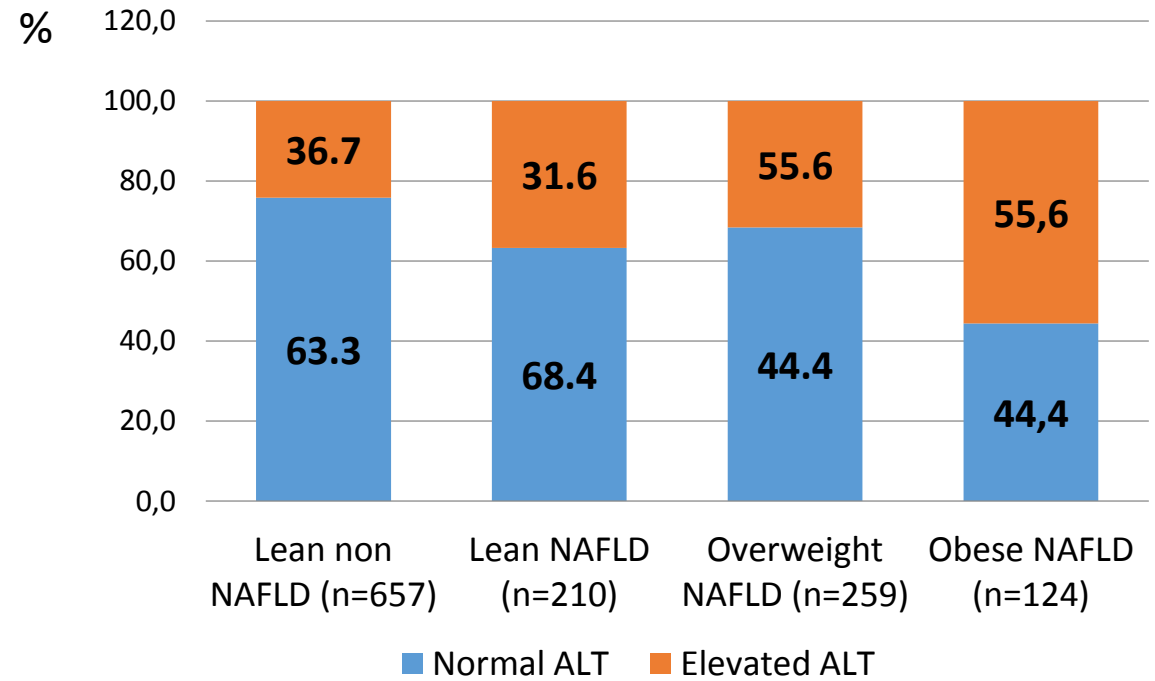
- **NAFLD** was defined as **CAP ≥ 248 dB/m**, in absence of alcohol abuse
- **Lean NAFLD** was defined when **BMI < 25 kg/m²**
- **Fibrosis progression** was defined as development of **significant liver fibrosis (TE ≥ 7.1 kPa)**, or transition to **cirrhosis (TE ≥ 13 kPa)** for those with significant liver fibrosis at baseline

Results

1511 patients were included, of whom 45% were lean.

Prevalence of NAFLD and liver fibrosis in lean patients were 13.9% and 5.5%, respectively.

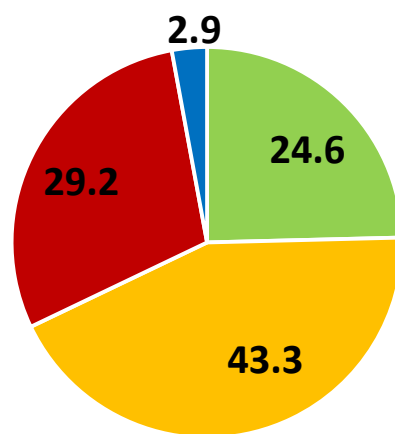
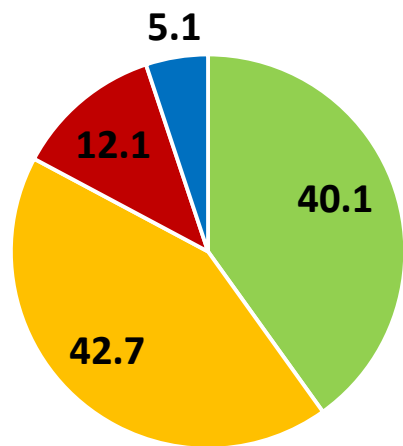
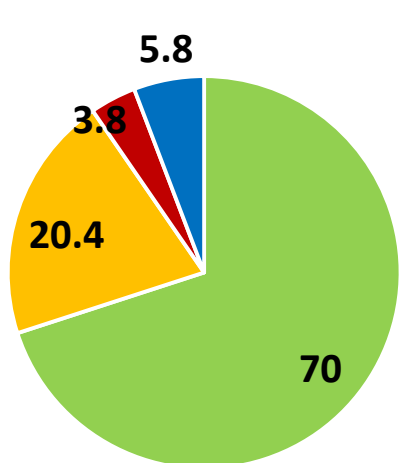
NAFLD affected 24% lean vs. 59% overweight patients ($p < 0.001$).



Lean (BMI < 25 Kg/m²)
(n=867)

Overweight (BMI 25-29.9 Kg/m²)
(n=473)

Obese (BMI ≥ 30 Kg/m²)
(n=171)

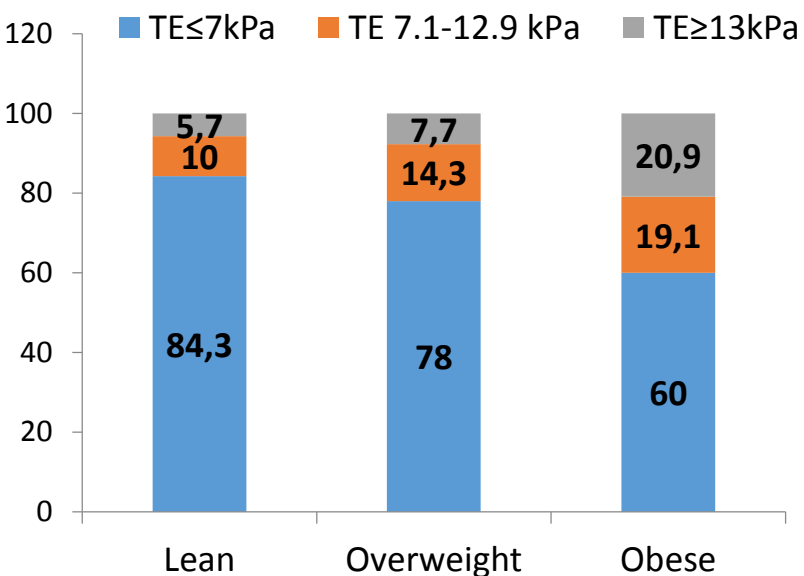


- No NAFLD-No Fibrosis
- NAFLD without fibrosis
- NAFLD with fibrosis
- Fibrosis without NAFLD

Lean NAFLD patients had similar prevalence of elevated alanine aminotransferase (ALT) as overweight patients (36.7% vs. 31.6%),



Lean NAFLD patients had similar
prevalence of significant liver fibrosis
(10% vs. 14.3%)



Multivariate analysis of predictors of NAFLD in lean HIV mono-infected patients

Variable	OR (95% CI)	aOR (95% CI)	P-value
Age (per 10 years)	1.34 (1.15-1.57)	1.29 (1.04-1.59)	0.020
Male sex (yes vs. no)	1.34 (0.92-1.95)	0.99 (0.64-1.54)	0.970
Black ethnicity (yes vs. no)	0.58 (0.30-1.13)	1.18 (0.55-2.55)	0.670
Hypertension (yes vs. no)	1.63 (1.14-2.35)	1.10 (0.72-1.68)	0.654
Triglycerides (mmol/L)	1.56 (1.32-1.85)	1.34 (1.11-1.63)	0.002
HDL cholesterol (mmol/L)	0.32 (0.20-0.51)	0.45 (0.26-0.77)	0.004
Time since HIV diagnosis (per 10 years)	1.20 (1.03-1.40)	0.99 (0.80-1.22)	0.913
CD4 cell count (per 100 cell/mL)	1.05 (1.00-1.10)	1.05 (1.00-1.11)	0.056
Nadir CD4 <200 cell/uL (yes vs. no)	1.44 (1.04-2.00)	1.40 (0.98-2.00)	0.068
ALT (per 10 IU/L)	1.13 (1.04-1.22)	1.15 (1.05-1.26)	0.002

142 patients with NAFLD were followed for a median of 26 months (interquartile range 6-54).

Incidence rate of fibrosis progression was 24.5 per 100 persons-year (PY) (95% CI, 11.0-54.5) vs. 17.6 per 100 PY (95% CI, 12.5-24.9) in lean vs. overweight/obese patients (p=0.438).



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Conclusion

- NAFLD affects one in four lean HIV mono-infected patients
- Although lean NAFLD has been previously considered benign, lean NAFLD patients have similar degree of liver fibrosis and similar rates of liver fibrosis progression as overweight/obese NAFLD patients
- Investigations for NAFLD should be proposed in older patients with dyslipidemia and elevated ALT even if normoweight.

Conflict of Interest Disclosure

Nothing to disclose

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