"FIB-4 First" Strategy in a NAFLD Pathway Assessment for HIV Mono-infected Patients

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BACKGROUND

Non-alcoholic fatty liver disease (NAFLD) is the main cause of liver disease in people living with HIV (PLWH).

Even if transient elastography (TE) is a feasible and effective option to assess promptly both NAFLD and fibrosis, it is not largely accessible.

Fibrosis-4 (FIB-4) index at the threshold of 1.3 could be used to triage PLWH in need for further evaluation for NAFLD and associated liver fibrosis.

The **aims** of this study were:

i) to estimate the proportion of TE examinations which would be spared using a "FIB-4 first" strategy in PLWH;

ii) to determine prevalence and associated cofactors of discordance (false negativity) between TE and FIB-4 in patients classified as low risk for fibrosis by FIB-4.

METHODS

HIV-infected patients with TE from three **cohorts**:
LIVEHIV (Montreal)
LHIVPA (Palermo)
MHMC (Modena)

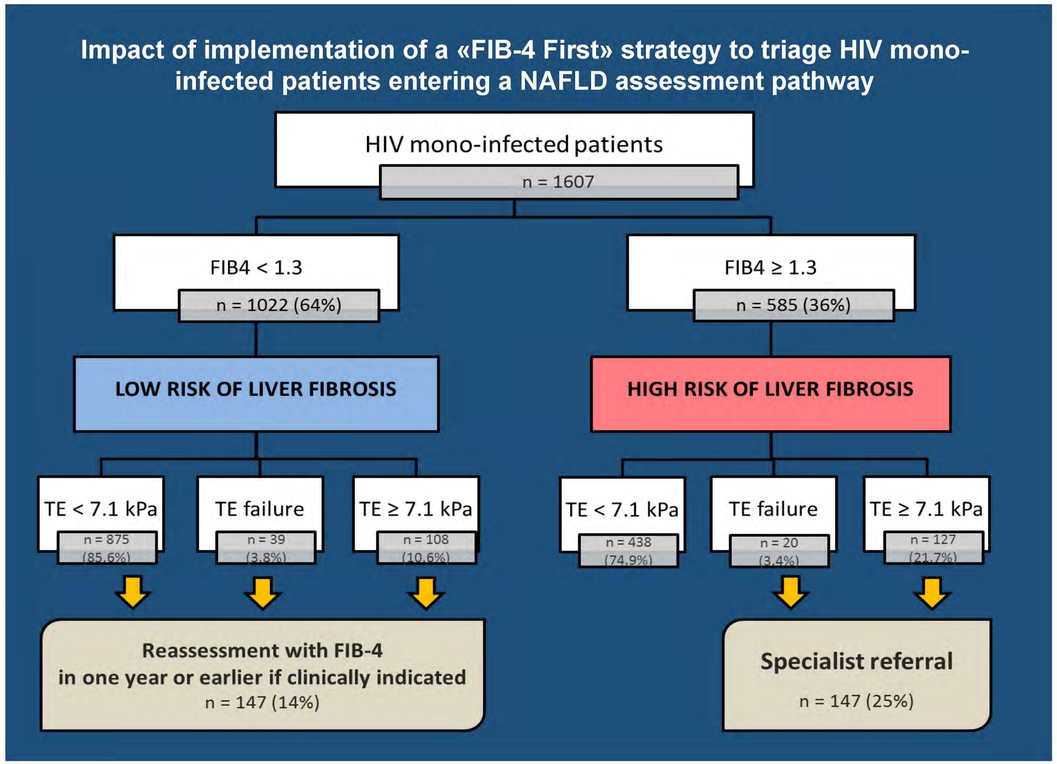
→ **1607 HIV mono-infected patients**

Exclusion criteria:
HBV/HCV coinfection;
Alcohol abuse;
FIB-4 not available

- **NAFLD** → Controlled attenuation parameter (CAP) ≥248 dB/m
- **Significant liver fibrosis** → TE ≥7.1 kPa
- **Cirrhosis** → TE ≥13 kPa
- **Unreliable TE examination** → IQR value >30% and/or less than 10 valid measures

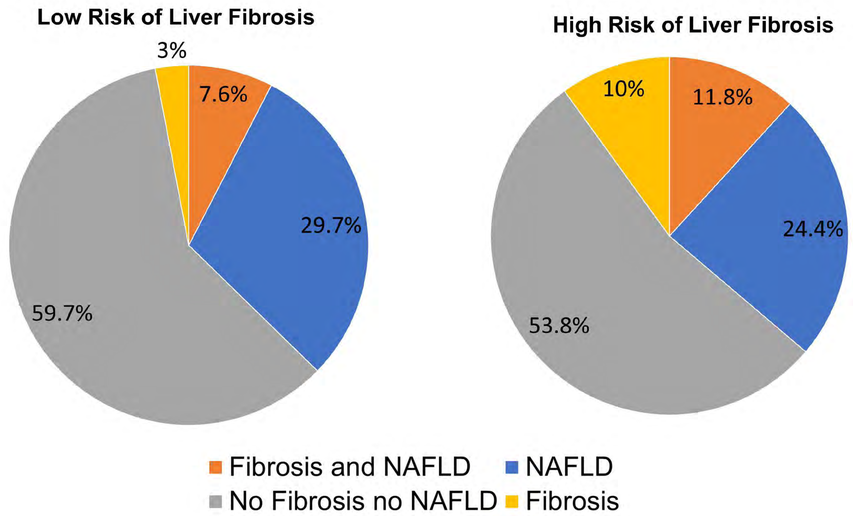
A **FIB-4 threshold of 1.3** was used to categorize patients as **low** or **high-risk** for liver fibrosis.

Predictors of discordance between TE and FIB-4 in patients at low-risk were analysed by multivariable logistic regression.



RESULTS

1607 HIV mono-infected patients were included. Prevalence of NAFLD and liver fibrosis were 37% and 15%, respectively.



585 (36%) patients were at **high risk for liver fibrosis** by FIB-4: 212 (36%) had NAFLD and 127 (22%) had significant liver fibrosis by TE (of whom 69 patients had NAFLD and 44 patients had cirrhosis).

Patients at **low risk** were **1022 (64%):** 108 (11%) had significant liver fibrosis by TE (of whom 78 patients had NAFLD and 13 patients had cirrhosis) (see Figures).

Factors associated with discordance between TE and FIB-4 in patients with FIB-4 <1.3 were BMI ≥25 kg/m^2 and low HDL cholesterol (see Table)

Table. Multivariable analysis of predictors of discordance between TE and FIB-4 in patients at low risk of liver fibrosis.

	aOR (95% CI)	P value
Male sex	1.10 (0.66-1.82)	0.733
Nadir CD4 < 200 cell/uL	1.21 (0.77-1.89)	0.411
Undetectable viral load	1.27 (0.69-2.32)	0.430
Time to HIV diagnosis	1.01 (0.98-1.03)	0.605
Diabetes	0.77 (0.46-1.28)	0.320
BMI ≥25kg/m^2	3.66 (2.29-5.84)	0.000
Low HDL cholesterol	1.72 (1.06-2.78)	0.010

CONCLUSIONS

A FIB-4 first risk-stratification model could save more than 50% of TE examinations, helping resource optimization in HIV clinics. Patients stratified as low risk by FIB-4 should be considered for referral for TE examination in case of metabolic risk factors for NAFLD, in particular overweight and low HDL cholesterol.

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