"FIB-4 first" risk-stratification model in a NAFLD assessment pathway 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

Even if transient elastography (TE) is a feasible and effective option to assess promptly both NAFLD and fibrosis, it is not largely accessible
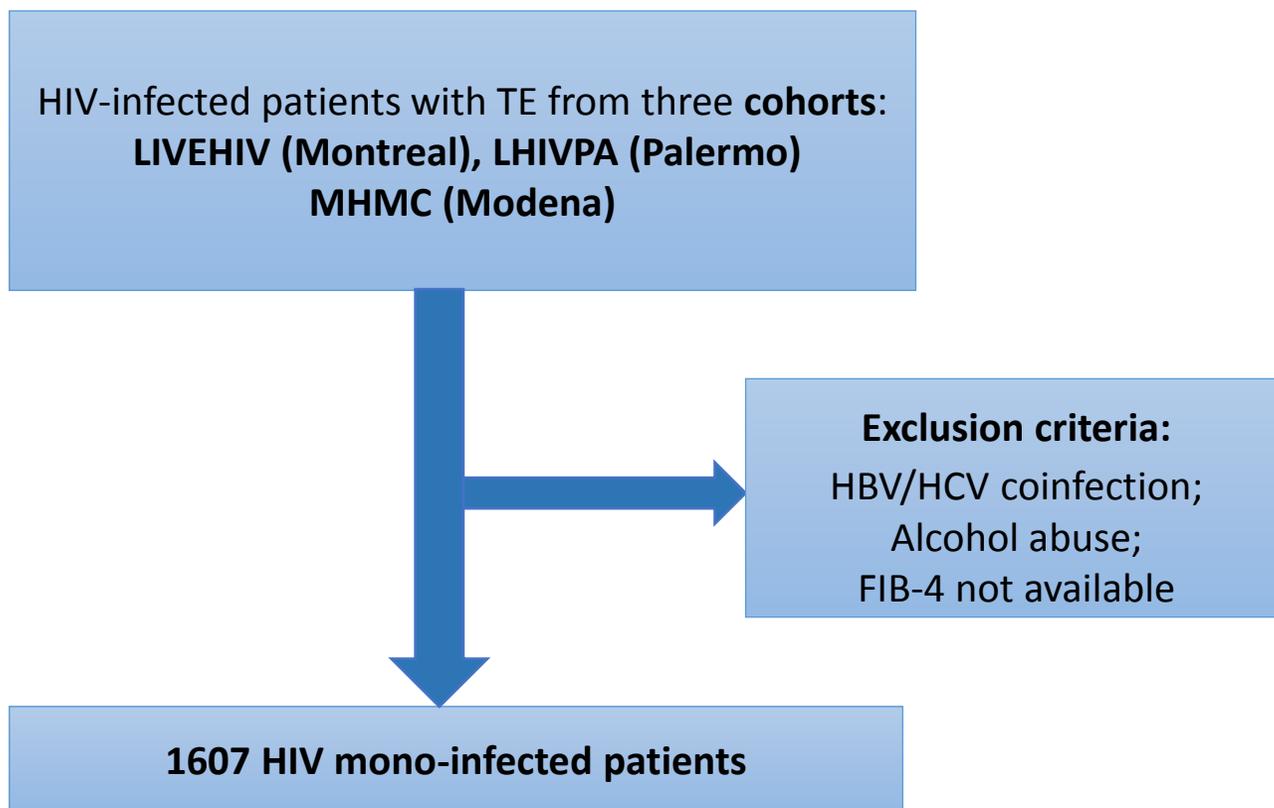
Fibrosis-4 (FIB-4) index at the threshold of 1.3 could be used to triage PLWH in need for further evaluation for NAFLD and associated liver fibrosis

Objectives

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

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

Methods

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

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

1607 HIV mono-infected patients

NAFLD → CAP≥248 dB/m

Significant liver fibrosis → LSM ≥7.1 kPa
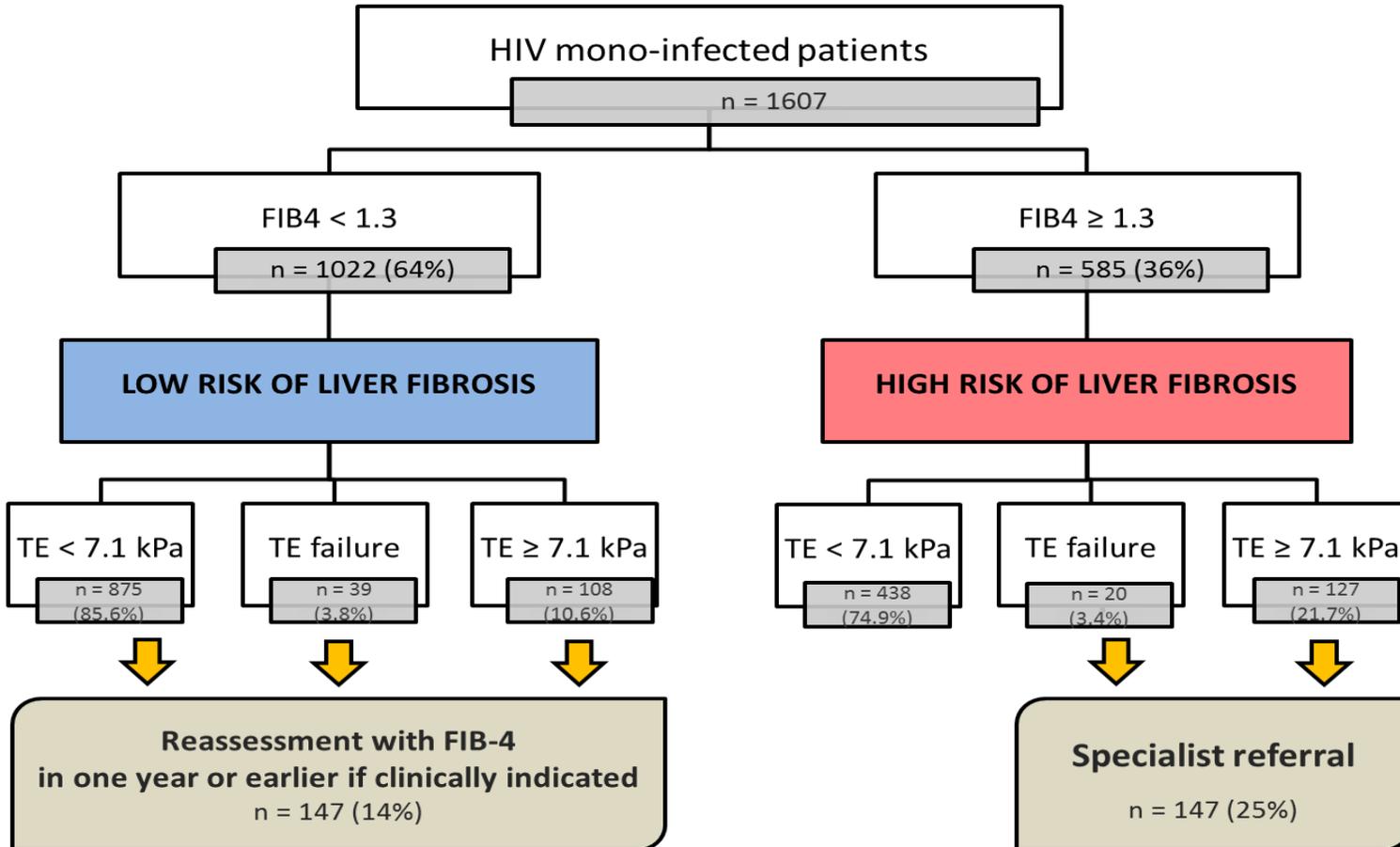
Cirrhosis → LSM ≥13 kPa

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.

Multivariable logistic regression analysis was used to identify cofactors associated with discordance between TE and FIB-4 for low-risk category

Results

Predictors of discordance between TE and FIB-4 in patients at low risk of liver fibrosis

	aOR	95% CI	P value
Male sex	1.1	0.66-1.82	0.733
Nadir CD4 < 200 cell/uL	1.21	0.77-1.89	0.411
Undetectable HIV 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/m²	3.82	2.40-6.07	0.000
Low HDL cholesterol	1.80	1.15-2.83	0.010

Conclusion

❑ 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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