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REAL-LIFE BURDEN OF VIRAL HEPATITIS AND MASLD IN UNDERSERVED RURAL COMMUNITIES IN CENTRAL AND NORTH ROMANIA
RESULTS FROM THE HE-RO-I PROJECT

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Introduction

As of 2023, 45.33% of Romania's population resides in rural areas [1], many in remote regions with limited access to healthcare and education.

Aims & Methods:

To assess the prevalence of viral hepatitis & to evaluate MASLD in Romania's remote rural population

Between 2022-2024, Caravans were conducted in 17 villages across Central and North Romania. (Fig 1, 2)

Participants underwent:
o clinical evaluations
o blood tests (including rapid tests for hepatitis B and C)
o abdominal ultrasound
o non-invasive assessment of liver steatosis and fibrosis using ultraportable devices

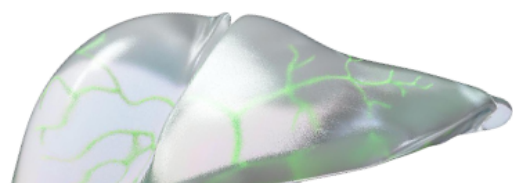Fibrosis assessment: liver stiffness measurements (LSM), FIB-4 and NAFLD Fibrosis Score (NFS).

Fig 1. Liver Screening Caravan of HE-RO-I Project

Results

1,935 individuals were screened, 1,721 had blood tests, 1,692 had rapid tests for hepatitis B and C, and 1,208 underwent ultrasound.

o MASLD status could be assessed in 1,305 participants of whom 617 (47.3%) met the diagnostic criteria [2].

o The prevalence of hepatitis B was 2.18% and of hepatitis C was 3.19%.

➤ **Cardiometabolic risk factors in MASLD**

o obesity OR=5.07 [3.93–6.54],p<0.001
o diabetes OR=3.43 [2.56–4.61],p<0.001
o dyslipidemia OR=2.29 [1.80–2.91],p<0.001
Most MASLD patients had multiple metabolic risk factors: 30.47% had 2, 52.51% had 3 or more.

➤ **Liver fibrosis in MASLD**

Median LSM and FIB-4 showed minimal variation across individual cardiometabolic risk factors.

Increasing trends of advanced fibrosis were seen with higher cardiometabolic burden, but only NFS demonstrated differences between risk groups (p=0.0025 for 1 vs 3+, p=0.0012 for 2 vs 3+).

Fig 2. a). Romanian Counties where Caravans took place b). Medical team c). Rapid hepatitis test d). Non-invasive liver tests

➤ **Advanced fibrosis in MASLD**

o LSM 6.24% (vs.3.29% in non-MASLD, p=0.001)
o FIB-4 5.3% (vs. 6.1% in non-MASLD, p=0.144)
o NFS 7.8% (vs. 4% in non-MASLD, p < 0.001)

Dyslipidemia was associated with the highest prevalence of advanced fibrosis based on LSM (6.86%) and NFS (8.44%) and diabetes or prediabetes based on FIB-4 (3.56%).

Diabetes was present in over 90% patients with advanced fibrosis

Conclusion

Romania's remote rural communities have a substantial burden of preventable and underdiagnosed diseases.

Prevalence of hepatitis B and C was at or above national estimates ➔ need of expanded screening and vaccination.

MASLD affected nearly half of this large rural cohort and more than 80% had multiple metabolic risk factors.

1. National Institute of Statistics, Romania in figures-statistical abstract
2. EASL-EASD-EASO Clinical Practice Guidelines for MASLD J Hepatol 2024