DIAGNOSIS OF ESOPHAGEAL VARICES IN VIRUS-RELATED ADVANCED CHRONIC LIVER DISEASE

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on behalf of the Canadian HBV Network.

BACKGROUND

- HIV, HBV and HCV are important risk factors for the development of compensated advanced chronic liver disease (cACLD).
- Esophageal varices (EV) impacts the prognosis of cACLD and esophagogastroduodenoscopy (EGD) is the gold standard for their diagnosis.
- Non-invasive criteria based on liver stiffness measurement (LSM) and platelets (Baveno VI and expanded Baveno VI criteria) and simple fibrosis biomarkers have been proposed to avoid unnecessary EGD for large esophageal varices needing treatment (EVNT).

We aimed to validate and compare LSM based criteria and simple fibrosis biomarkers to diagnose EVNT in virus-related cACLD.

METHODS

- We used the Canadian Hepatitis B Network and LIVEHIV cohorts to perform a cross-sectional analysis of patients who underwent LSM in 2014-2020.
- Inclusion criteria:
  a) diagnosis of cACLD, defined as LSM≥10 kPa
  b) availability of EGD and platelets within 1 year of LSM.
- Baveno VI (LSM<20 kPa and platelets>150,000) and expanded Baveno VI criteria (LSM<25 kPa and platelets>110,000) were tested for EGD sparing and were compared to the simple fibrosis biomarkers:
  - Fibrosis-4 index (FIB-4)
  - AST-to-Platelets Ratio Index (APRI)
  - AST-to-ALT ratio (AAR)
- Optimized cut-offs of these biomarkers to diagnose EVNT were established by using the area under the curve analysis.

Non-invasive criteria based on LSM and platelets & simple fibrosis biomarkers can spare unnecessary EGD in virus-related cCALD.

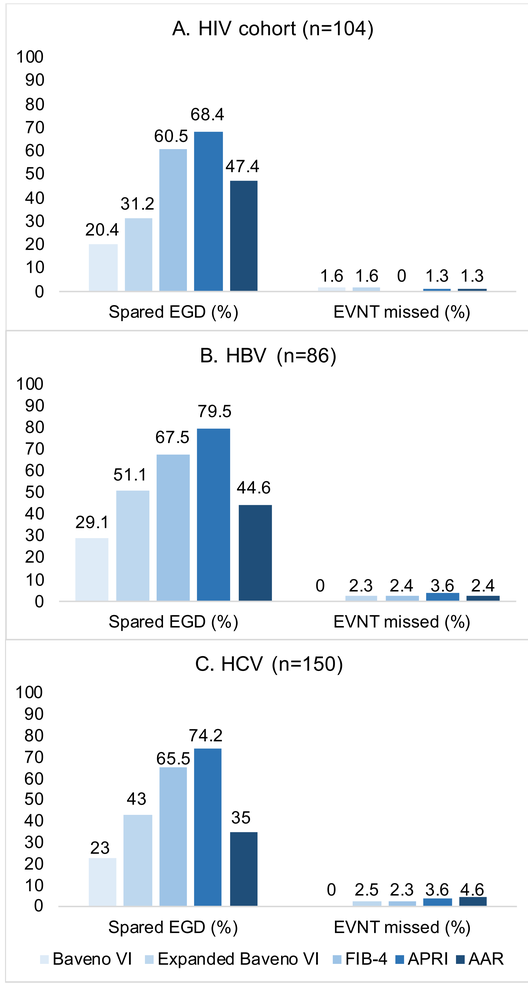
RESULTS

- A total of 340 patients (mean age 55, 33% female, 30.6% with HIV, 25.3% with HBV and 44.1% with HCV) were included.
- The optimized cut-offs for fibrosis biomarkers were, FIB-4 3.3, APRI 1.5, AAR 1.0.

	Sensitivity (%)	Specificity (%)	NPV (%)	PPV (%)
HIV (n=104)				
Baveno VI	80	22	92.8	8
Expanded Baveno VI	80	40.7	96	10.2
FIB-4	100	68.9	100	8
APRI	50.0	56.7	98.1	2.5
AAR	50.0	47.3	97.2	2.5
HBV (n=86)				
Baveno VI	100	32.1	100	13.1
Expanded Baveno VI	75.0	56.4	96.6	15.0
FIB-4	75.0	72.0	96.4	22.2
APRI	62.5	84	95.5	29.4
AAR	75.0	46.7	94.5	13.0
HCV (n=150)				
Baveno VI	100	12	100	25
Expanded Baveno VI	89	46	98	15
FIB-4	73.0	75.3	92.0	19.2
APRI	62.5	84.0	93.1	29.4
AAR	75.0	49.0	89.0	13.0

TABLE 1: Performance of non-invasive criteria for prediction of EVNT.

FIGURE 1: Comparison of spared EGD by viral etiology of cCALD.



CONCLUSIONS

- There was no difference in performance of the fibrosis biomarkers compared to LSM-based criteria.
- Non-invasive criteria based on LSM and platelets can spare unnecessary EGD in virus-related cACLD.
- Simple fibrosis biomarkers can ameliorate resource utilization and avoid invasive testing in context of screening EGD for patients with virus-related cACLD.

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