

External validation of the PAGE-B score to estimate the risk of hepatocellular carcinoma in persons living with HIV and hepatitis B

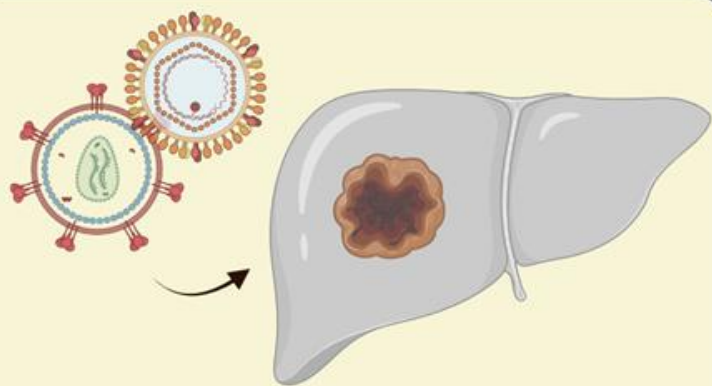
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*Financial Disclosures:
The institution of BS has received travel grants from
Gilead Sciences and ViiV Healthcare.*

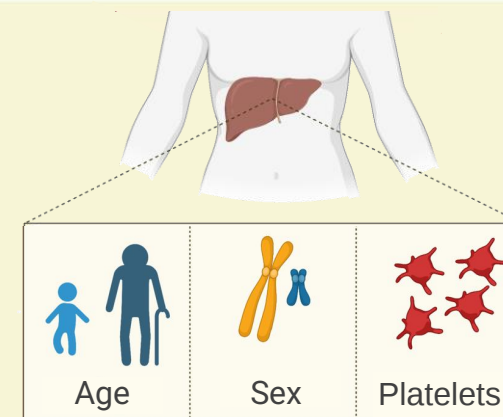
Background



Hepatocellular Carcinoma (HCC)



Targeted screening



PAGE-B Score

Evaluate the **external validity of PAGE-B** to determine the **HCC risk among individuals with HIV/HBV coinfection**

Collaboration of European Cohorts



Inclusion criteria



Started
TDF or TAF

Last
HBsAg +

No HCC at
tenofovir start

- **Treatment** and **HCC screening** at the discretion of the physician
- **HCC** ascertained prospectively with **dedicated case report forms**
- **Model discrimination** (c-index), **Sensitivity/Specificity**, and **negative predictive value**
- **Multiple Imputation** for missing data

Study Population



SHCS
N = 507



ATHENA
N = 1319



Aquitaine
N = 337



EuroSIDA
N = 800

2963 individuals with HIV/HBV coinfection

Age (years)

41

(35–47)

CD4 (cells/μL)

323

(182–510)

Platelets (G/L)

190

(141–236)

Median

Interquartile Range

Female



16%

African origin



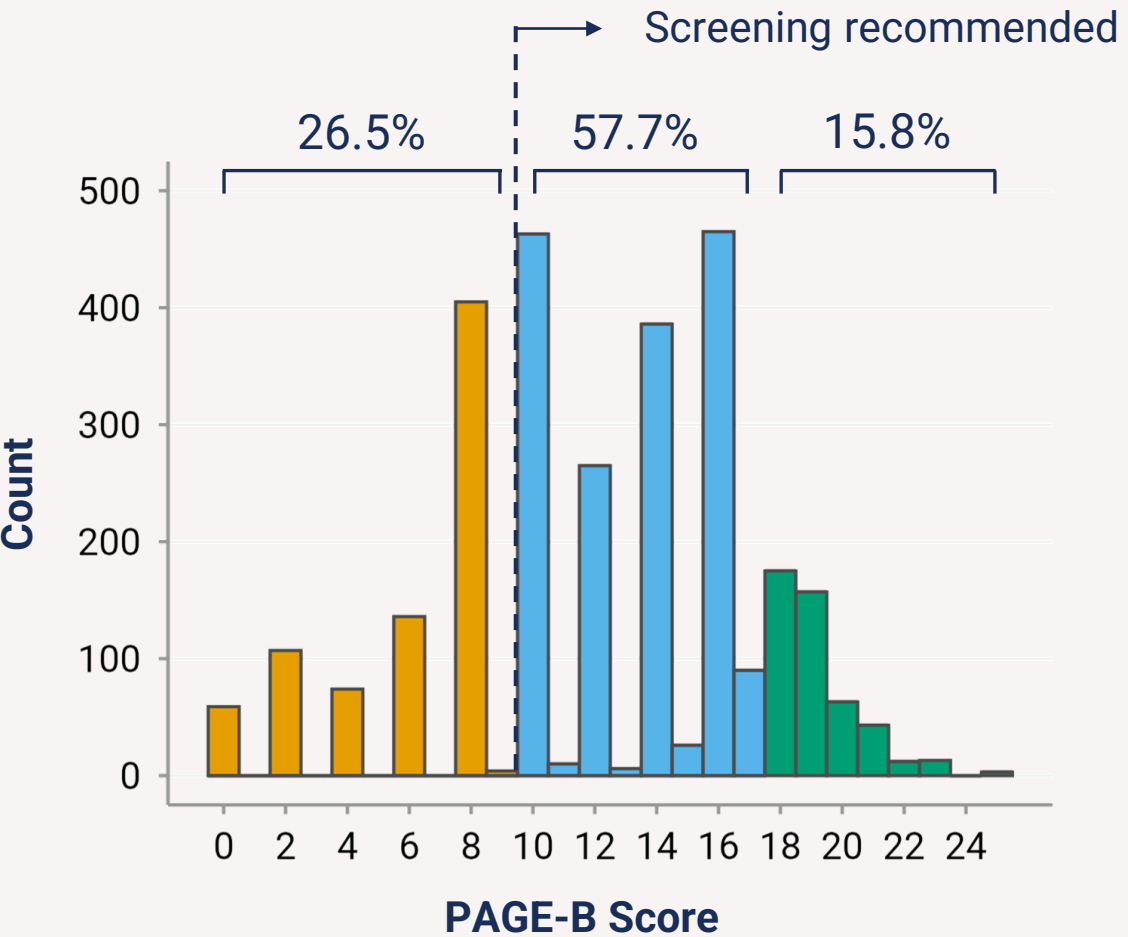
18%

Liver cirrhosis



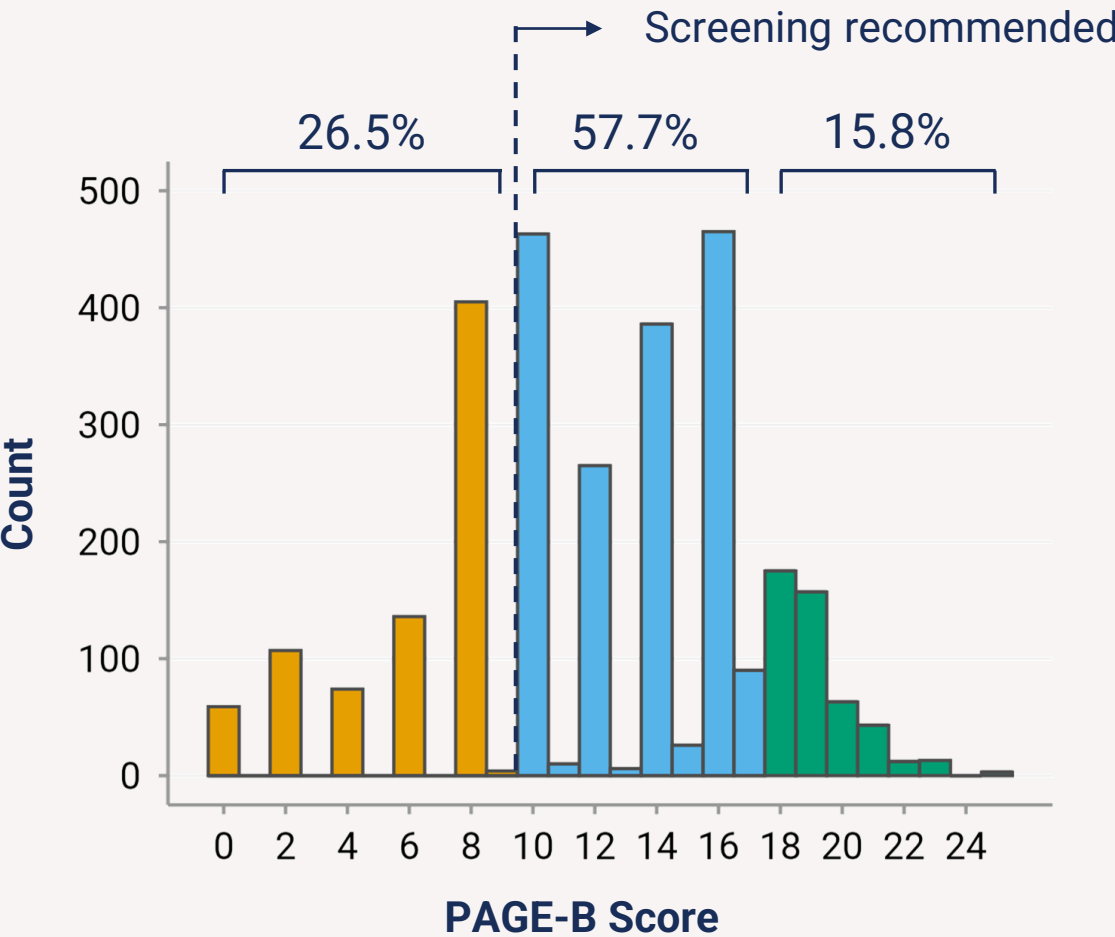
11%

PAGE-B distribution and hepatocellular carcinoma



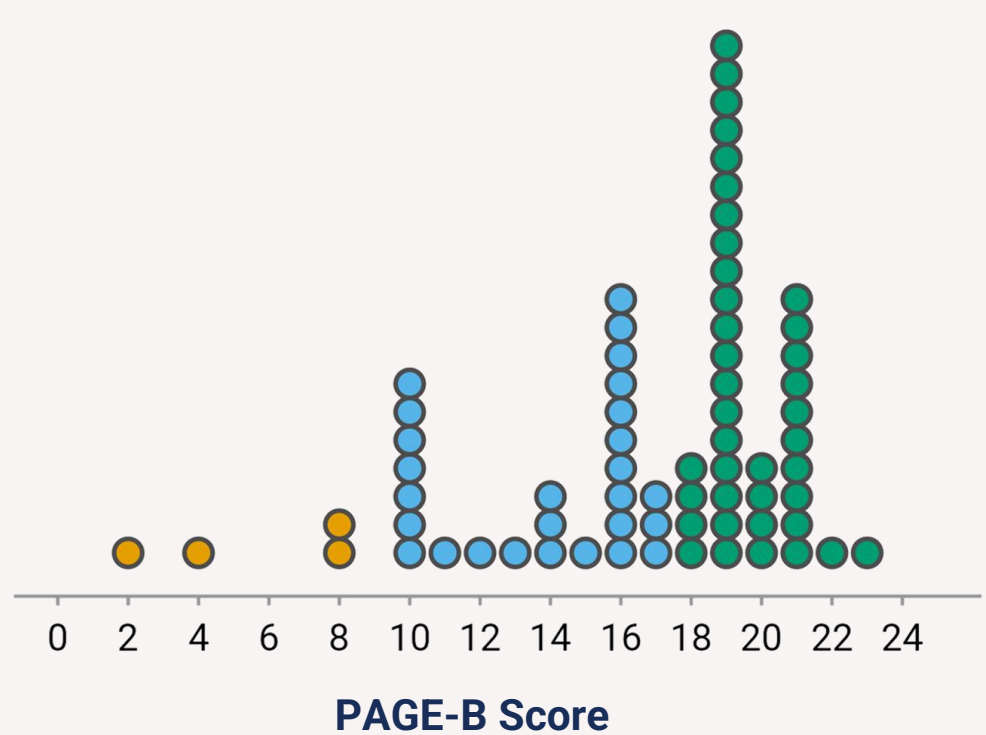
Median FUP 9.6 years (4.9 - 13.3)

PAGE-B distribution and hepatocellular carcinoma



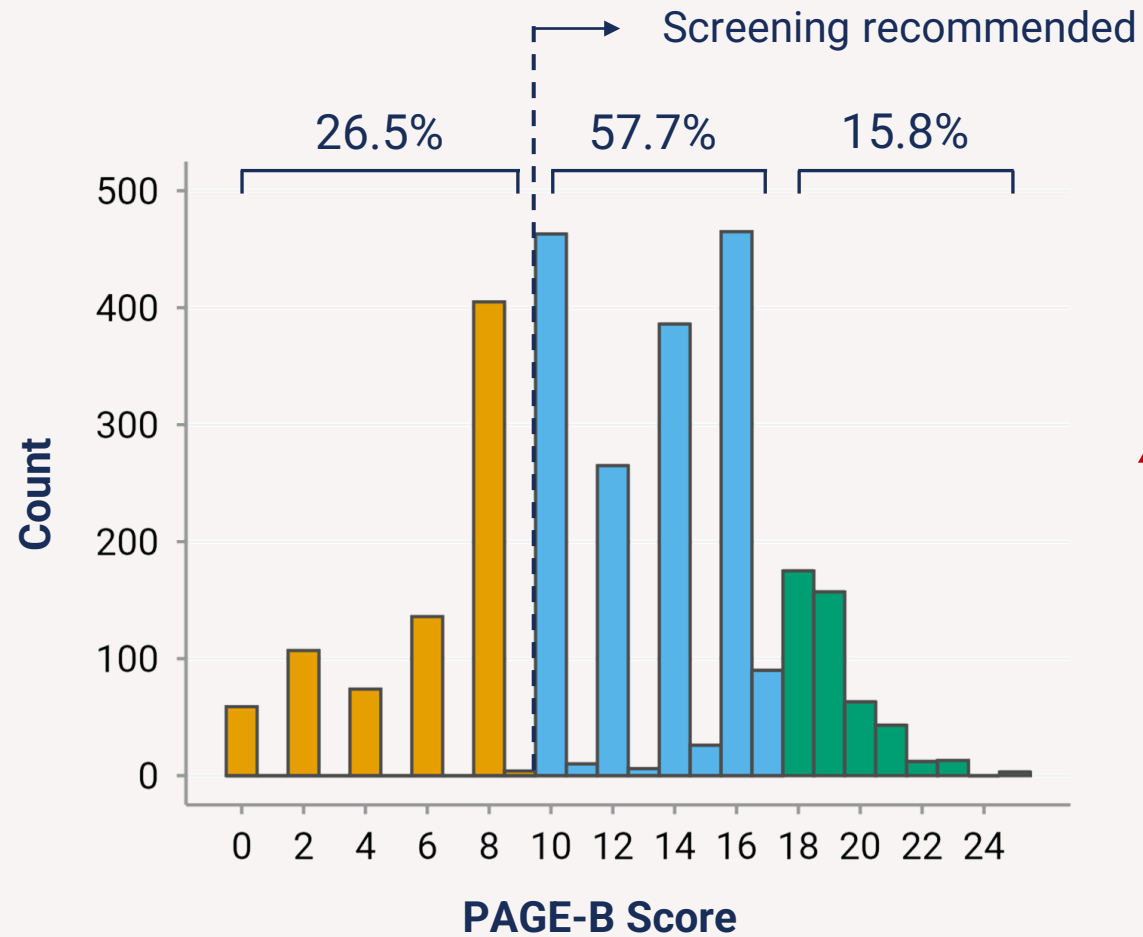
Median FUP 9.6 years (4.9 - 13.3)

Each ● indicates one HCC case

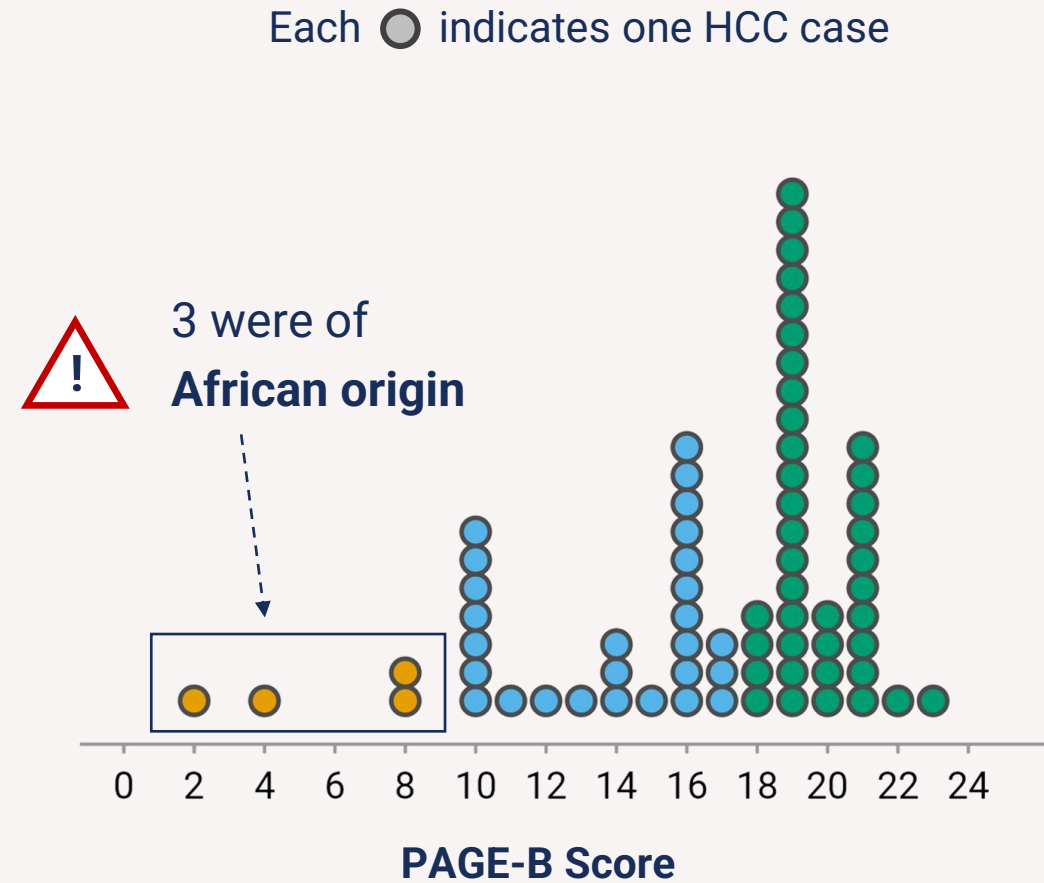


68 HCCs (IR 2.58 per 1000 PY, CI 2.03 - 3.27)

PAGE-B distribution and hepatocellular carcinoma



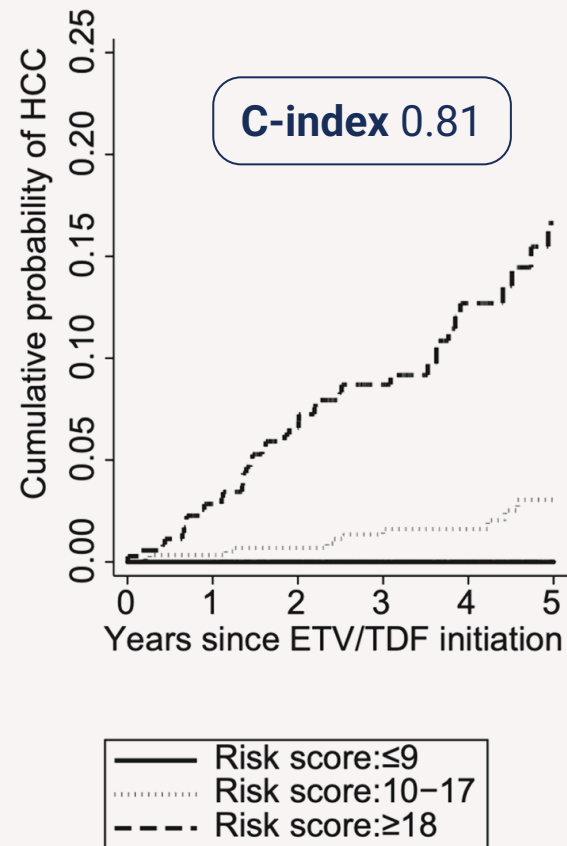
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Model discrimination

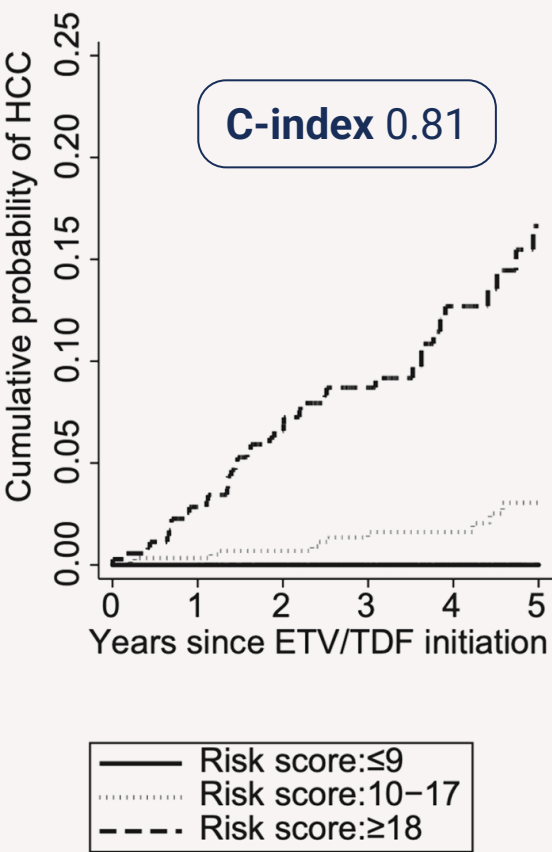
Original derivation paper¹



¹Papatheodoridis et al. *J Hepatol* 2016

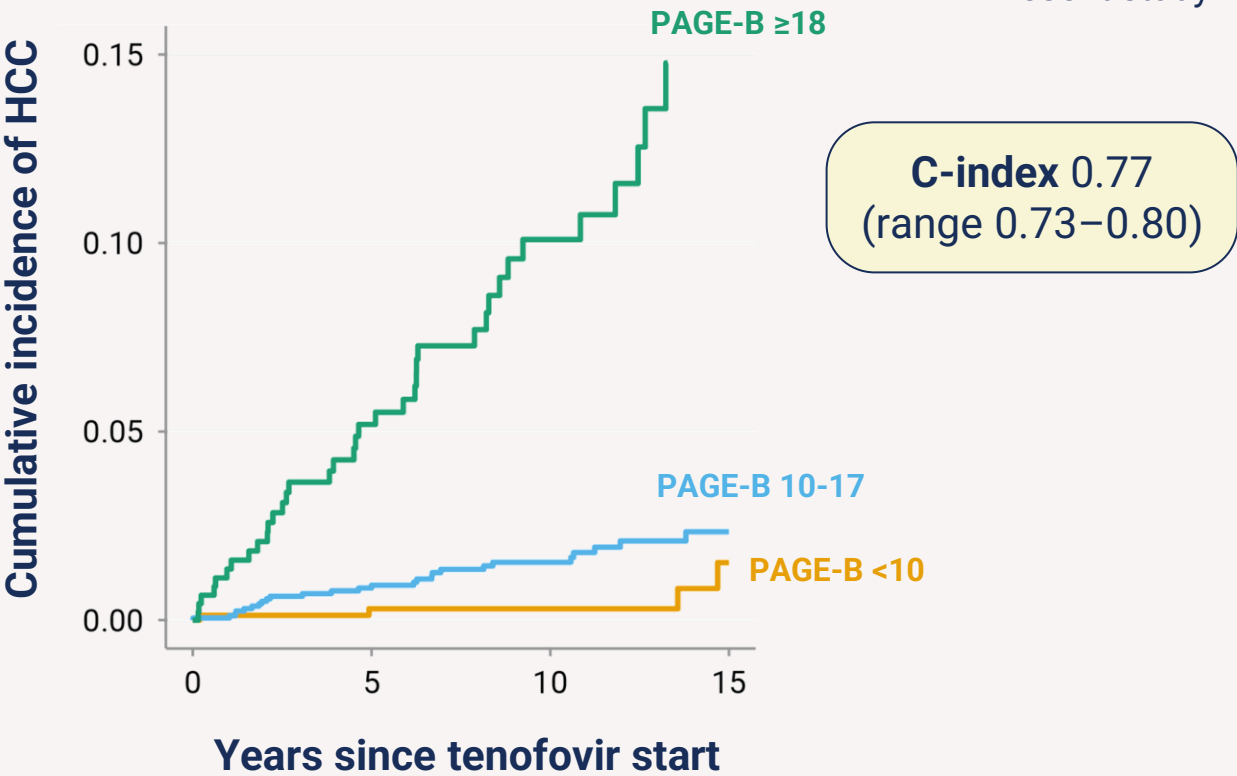
Model discrimination

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Present study

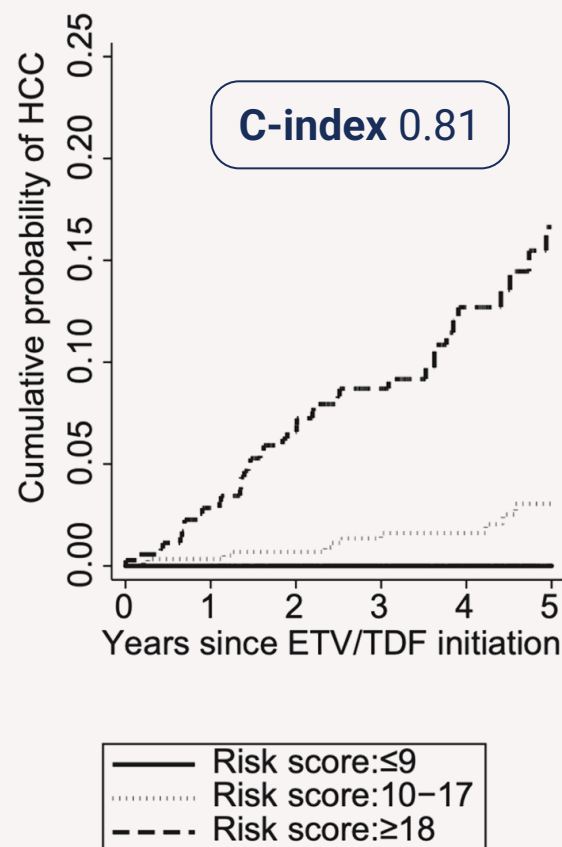


No. at risk

PAGE-B < 10	785	573	358	131
PAGE-B 11-17	1711	1319	863	279
PAGE-B ≥ 18	466	311	175	52

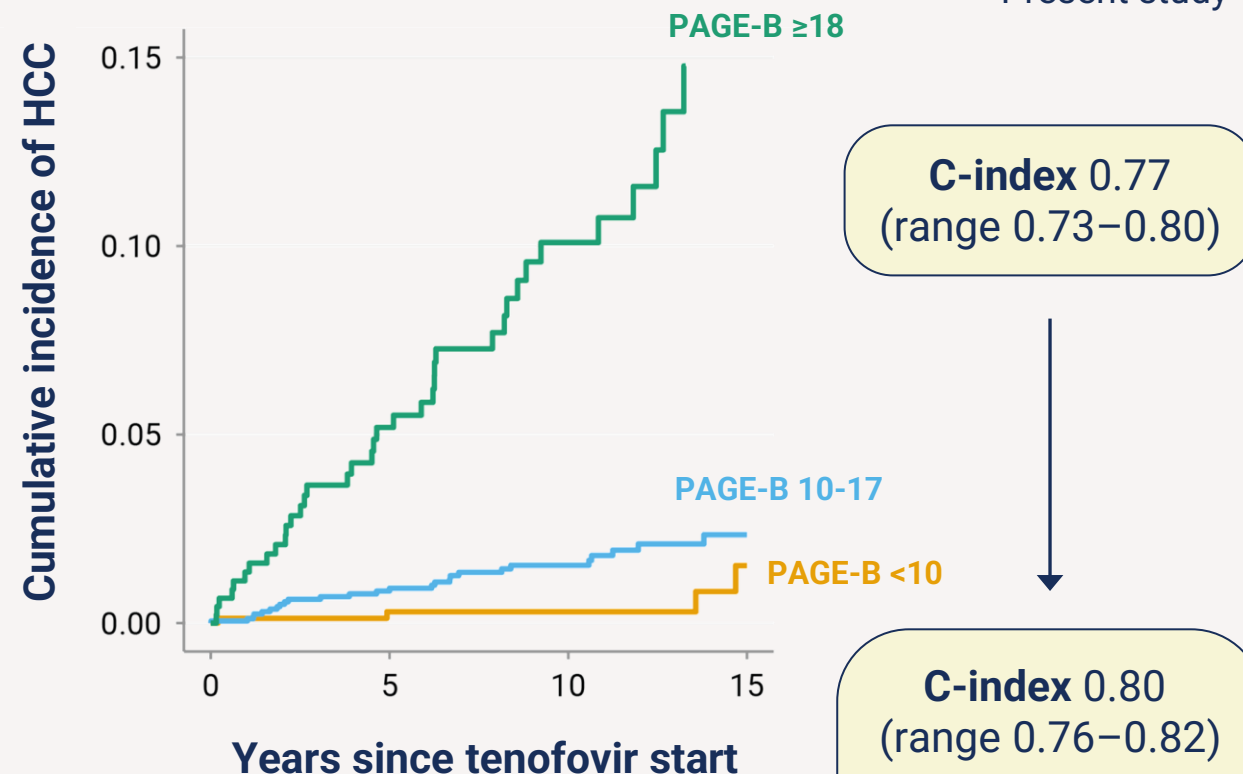
Model discrimination

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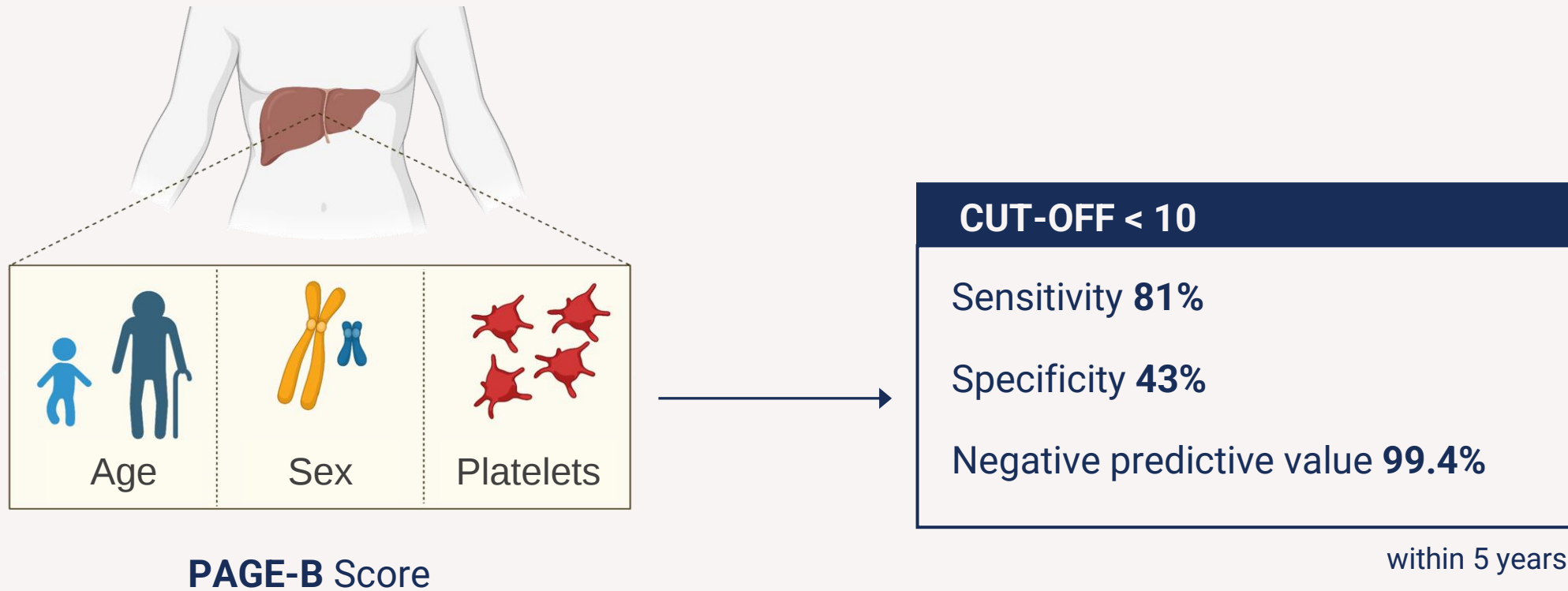


No. at risk

PAGE-B < 10	785	573	358	131
PAGE-B 11-17	1711	1319	863	279
PAGE-B ≥ 18	466	311	175	52

C-index 0.80
(range 0.76–0.82)
Non-African individuals

Screening threshold



Conclusions

- PAGE-B **valid to estimate HCC risk** in individuals with HIV/HBV
- Very **high negative predictive value** if PAGE-B <10
- Useful tool to **determine need for HCC screening**
- Better prediction models needed for **individuals of African origin**

Acknowledgements



Gilles Wandeler

Andri Rauch

Huldrych F. Günthard

Annalisa Berzigotti

Adrià Ramírez-Mena



Colette Smit

Marc van der Valk



Marie Roumet

Andreas Limacher



Olivier Leleux

Fabrice Bonnet



Amanda Mocroft

Jürgen K. Rockstroh

Lars Peters

We especially thank all cohort participants!



neatid | The European treatment network for HIV, hepatitis and global infectious diseases