Similar discriminatory values of IPS-E, AIPSE, and CR0 scores predicting time to first treatment in a large series of unselected patients with early-stage CLL

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BACKGROUND

- Most patients with chronic lymphocytic leukemia (CLL) are diagnosed in early phases of the disease.
- Identifying patients with a high risk of progression may be useful to decide the frequency of clinical controls and to include patients at high risk of disease progression in clinical trials.
- Several scores including IPS-E, AIPS-E, and CR0 scores, have been designed to predict to first treatment (TTFT) in patients with early-stage CLL.

OBJETIVES

1. Main objective: to compare the discriminatory value of each score for detecting patients with CLL at an early stage with a high risk.
2. Secondary objectives: to determine the concordance between scores.

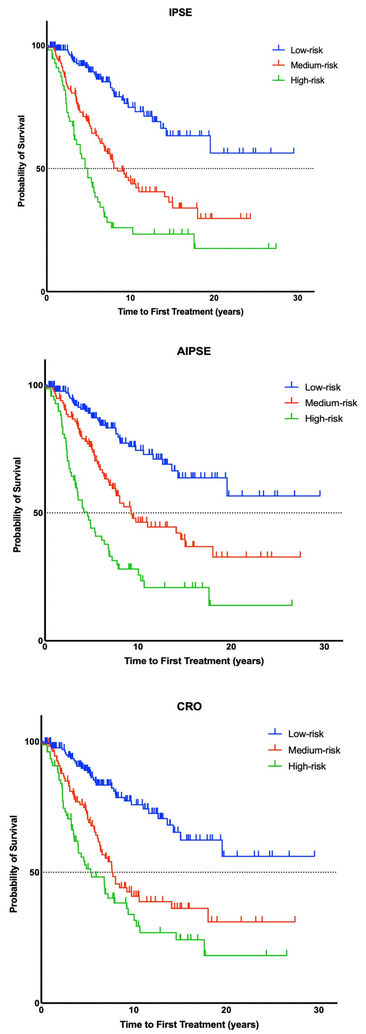
PATIENTS AND METHODS

- Retrospective, and non-interventional study performed in 2 Spanish centers: Hospital de la Santa Creu I Sant Pau (HSCSP, Barcelona) and Hospital General Universitario Gregorio Marañón (HGUGM, Madrid).
- Inclusion criteria: patients with early-stage CLL (Binet A and Rai 0), and without criteria for treatment at diagnosis were included.
- The discriminatory value of each score was calculated using Harrell's Comparison Index (C index) and with Receiver Operating Characteristics (ROC) curves. The concordance between scores was measured with Cohen's kappa coefficient test.
- 354 patients were included. The median age at diagnosis was 67.3 years (28.9-93), and 180 were male (50.8%). As high-risk biomarkers at diagnosis, IGHV genes were unmutated in 37.3% of patients (132/354), del(17p) in 5.9% (21/354), and del(11q) in 8.2% (29/354).
- After a median follow-up of 6.9 years (0.13-29.5), 140 patients (39.5%) started first-line treatment, with a median TTFT of 5.7 years (0.1-24.9).

RESULTS

- The 3 scores were successfully validated in our cohort (Figure 1).

Figure 1. IPS-E, AIPS-E, and CR0 scores validation in our cohort



TTFT median (years)	Low Risk	Intermediate Risk	High Risk
IPSE	NR	6.8 (5.5-8.1)	3.9 (2.9-5)
AIPSE	NR	8 (5.6-10.4)	3.6 (3.1-4.3)
CR0	NR	6.8 (4.94-8.7)	4 (3-4.92)

- According to the C index, all the scores presented a good-discriminatory value (c=0.71 for IPS-E, c=0.71 for AIPS-E, and c=0.7 for CR0) for detecting high-risk patients, with no significant differences between the scores (p=0.46).
- The discriminatory value of the scores was also high according to the AUC with ROC (AUC=0.73 for IPS-E, AUC=0.72 for AIPS-E, and AUC=0.71 for CR0).
- The concordance between the scores for categorizing high-risk patients was analyzed, finding a substantial agreement between AIPS-E and IPS-E scores (k=0.68), and AIPS-E and CR0 scores (k=0.69), but it was moderate for IPS-E and CR0 scores (k=0.41).
- The percentage of patients classified as high-risk was not significantly different between the three scores (IPS-E 15.5% vs AIPS-E 19.2% vs CR0 21.5%; p=0.64).

CONCLUSIONS

- The scores had a similar discriminatory value according to the C-index (c=0.71, c=0.71, and c=0.7, respectively).
- Although the c-value is high, there is an uncertainty level of 30% whichever the score.

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