

INTRODUCTION

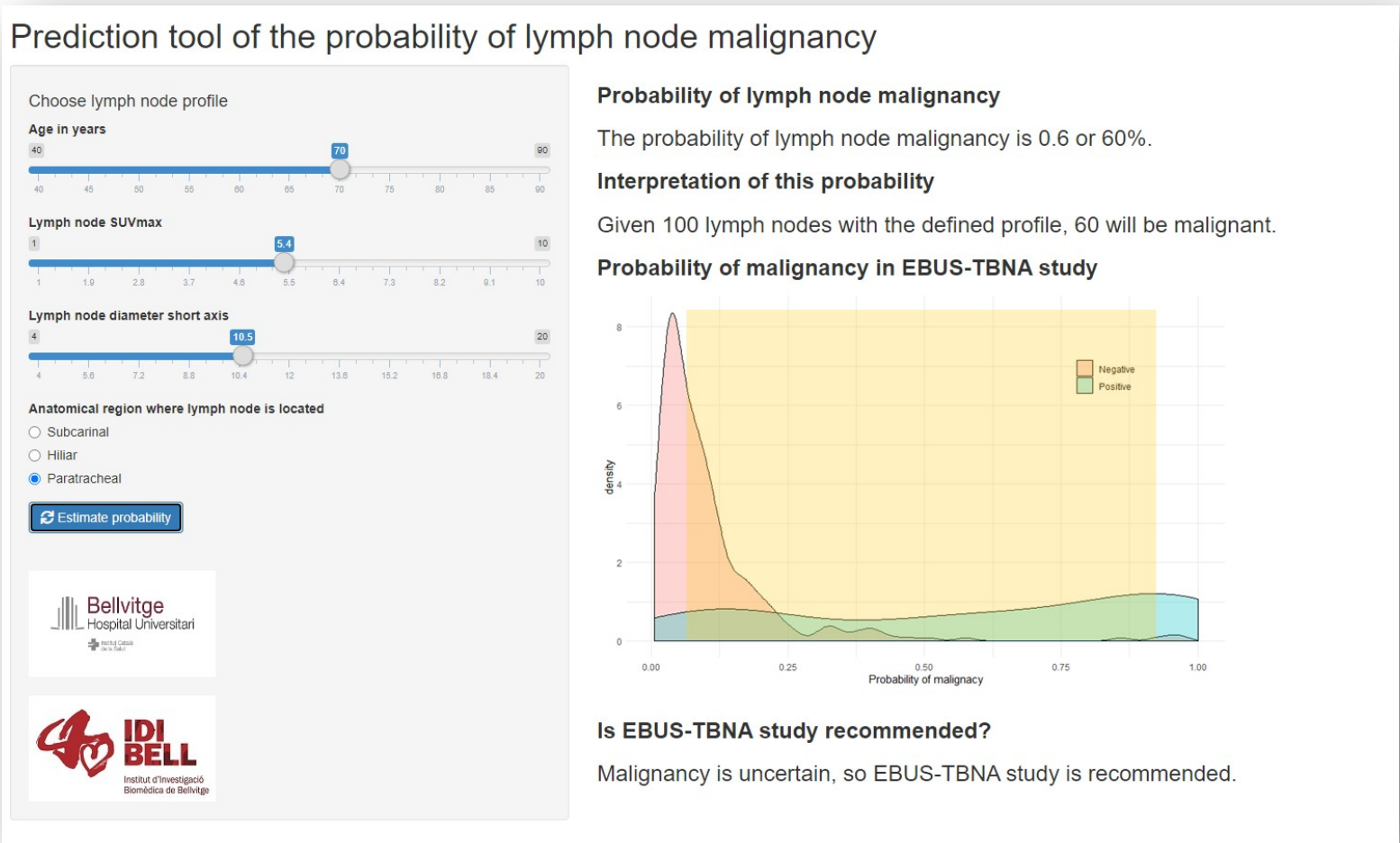
To validate an open-access, web-based calculator that **estimates the risk of lymph node metastasis** during EBUS staging in patients with non-small cell lung cancer.

 (<https://ubidi.shinyapps.io/lymma>)
Variables: age, SUVmax of each LM, short axis diameter and anatomical region

Bordas-Martinez J et al. Mediastinal staging lymph node probability map in non-small cell lung cancer. Respir Res. 2025 Mar 24;26(1):113.

METHODS

Design: Prospective, multicenter and multidisciplinary study in four Catalan public university hospitals.
For each sampled lymph node, the probability of malignancy was estimated using the predictive model (PM) and compared with the reference standard



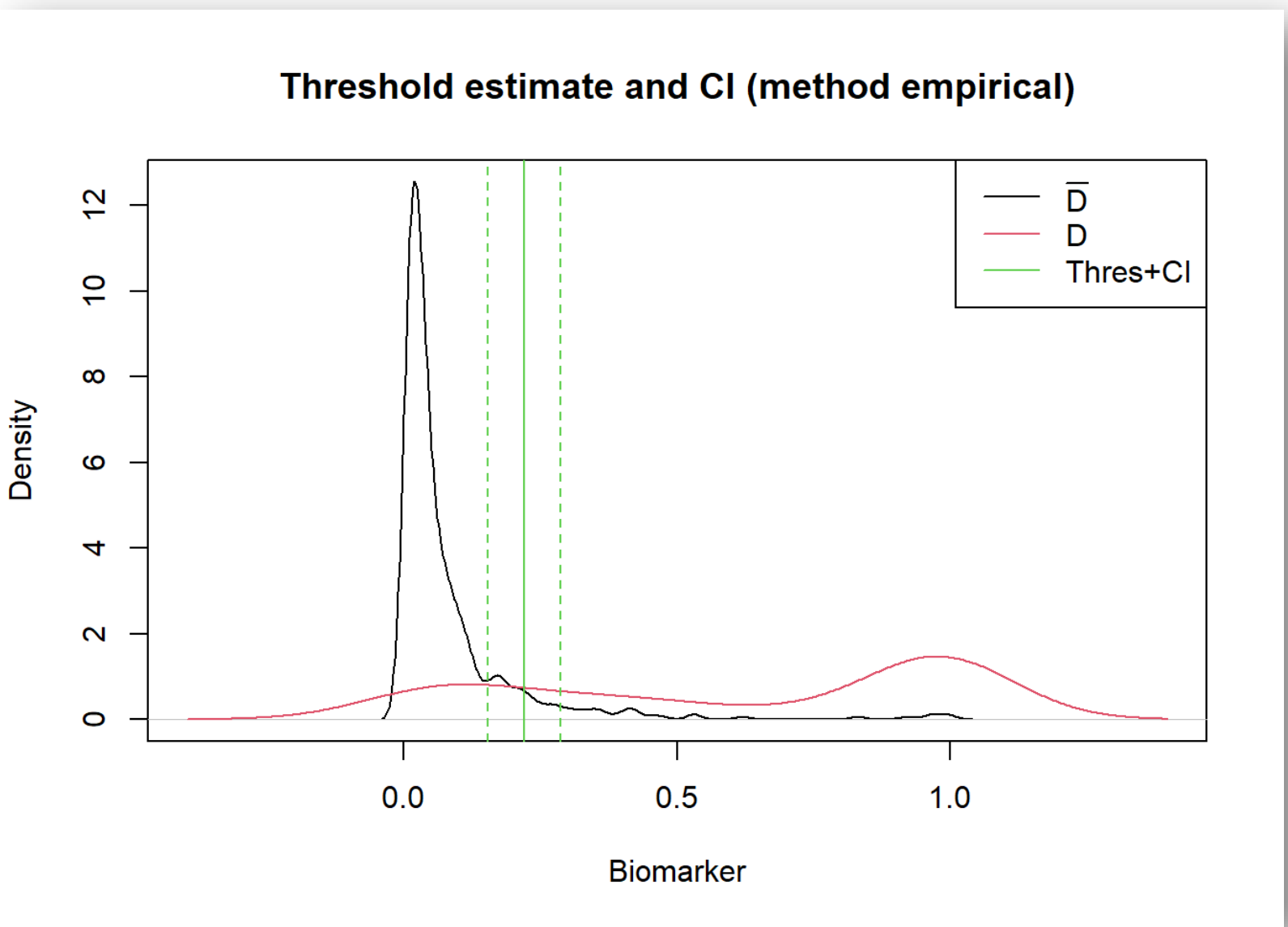
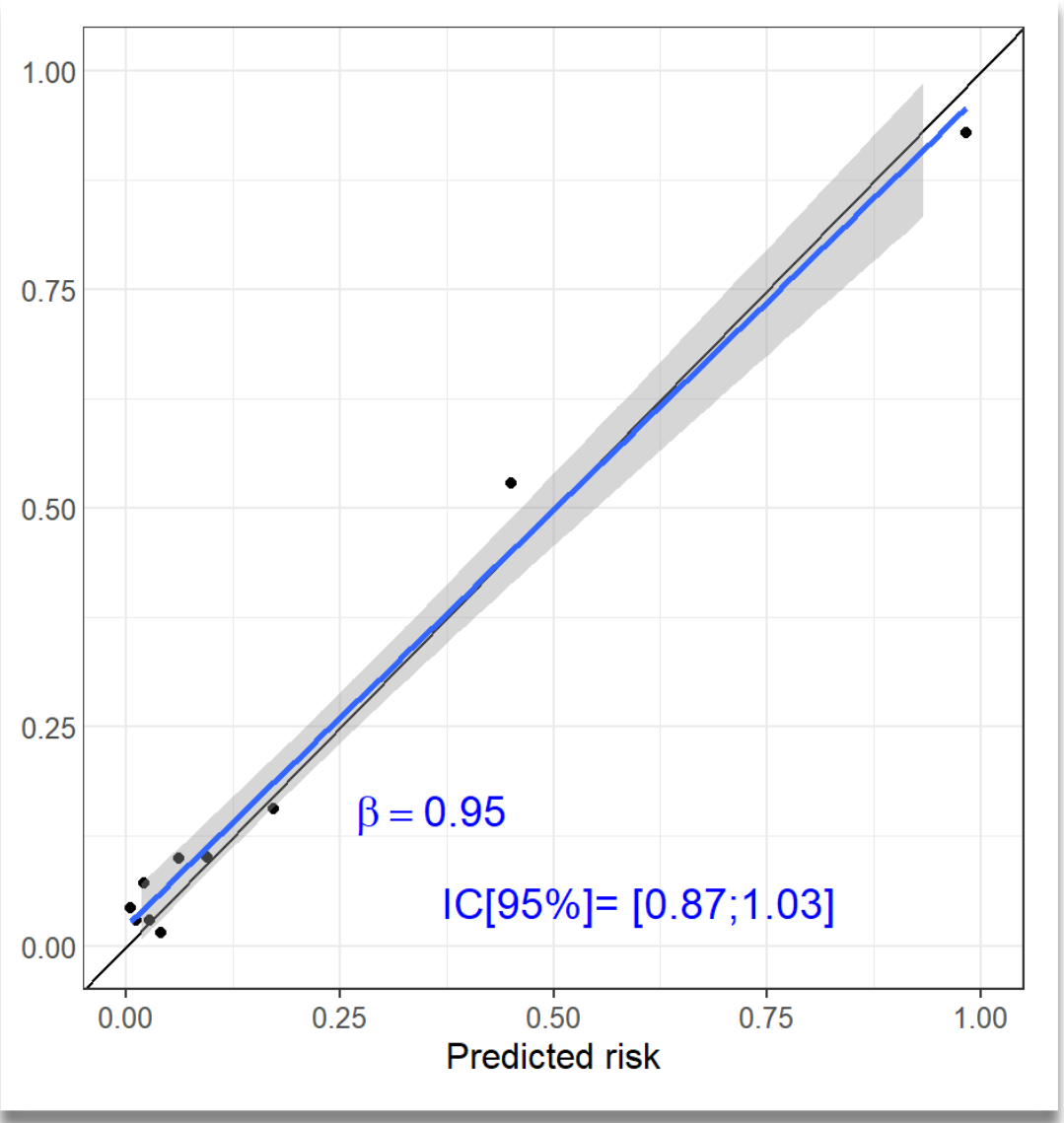
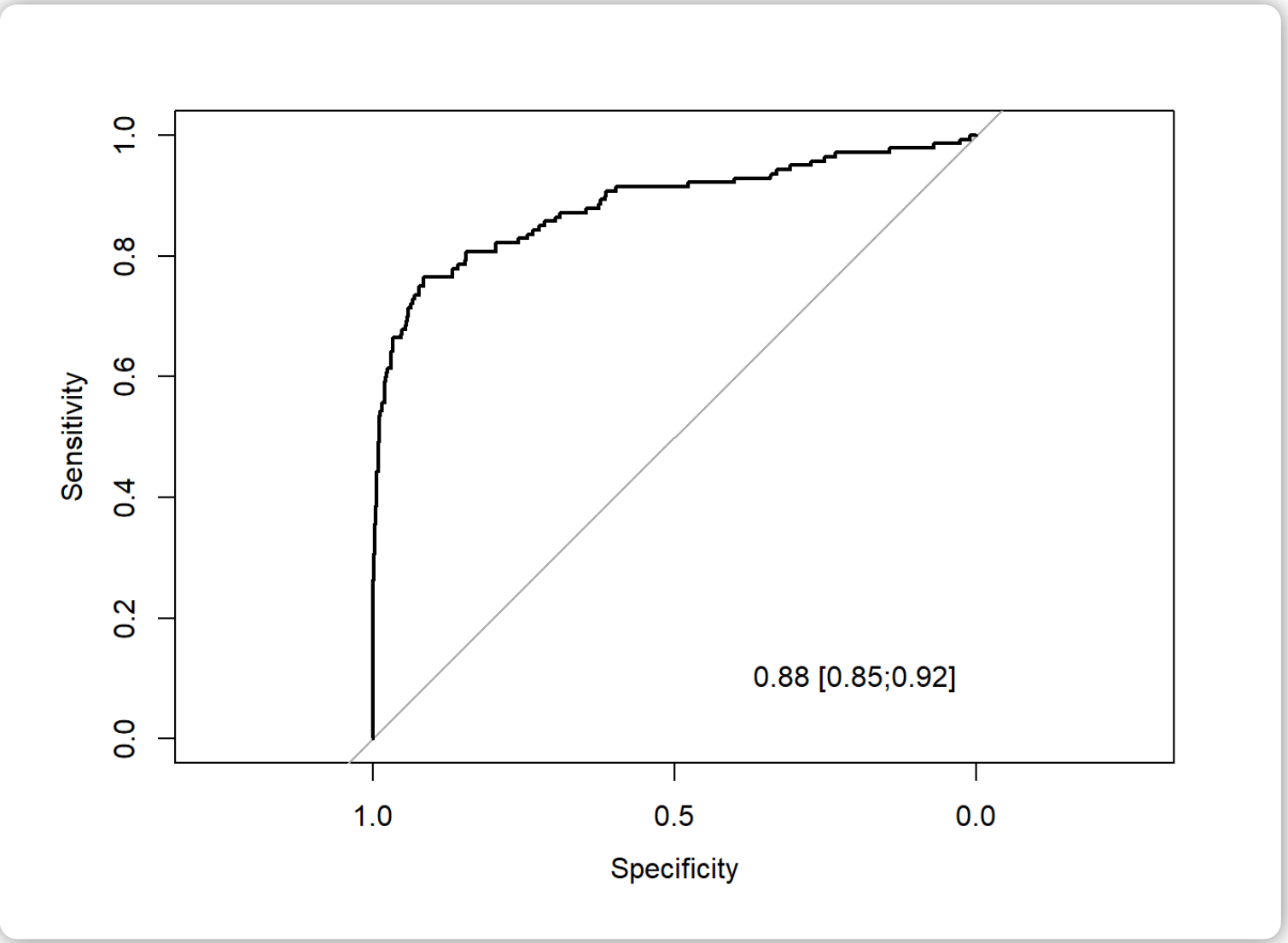
The following data was evaluated:

- Discriminating ability
- Calibration
- Diagnostic performance of the PM at different cut-off points
- Consistency of the results across centers and subgroups

RESULTS

- 202 patients (70 years old / 69% male / former somkers 57%)
 - 698 LN (median diameter 5.0 mm with Q1 3.0-Q3 7.0mm/ SUV max mean 3.5, SUV max median 2.43 (Q1 1.9, Q3 3.7)
 - Systematic sampling 99.8% of the cases
- Cytology:
- Negative 569 (81.5%): FN 11 (1.93%) confirmed by surgery (48%) or by follow-up for 1 year
 - Postive 129 (18.5%): no FP

- Predictive Model showed excellent **discriminative ability**
AUC : 0,88 (IC95% 0,85–0,92)
- Predictive Model demonstrated good a **calibration** with a calibration slope $\beta= 0.95$ (0.087;1.03) (*perfect = 1*) and a high overall accuracy of the predicted probabilities or Brier score : 0,08 (0.05-0.1) (*perfect = 0*)



	Estim.
Sensitivity	0.764
Specificity	0.916
Pos.Pred.Val.	0.709
Neg.Pred.Val.	0.936
Accuracy	0.884

- The **consistency** of the results across centers and subgroup was very high (0.91 for those results confirmed by pathology)

DISCUSSION AND CONCLUSION

- ✓ This prospective multicenter study validates the proposed predictive model by demonstrating an excellent discriminative ability (AUC 0.88) and a good calibration ($\beta = 0.95$, Brier score 0.08) for mediastinal staging of lung cancer
- ✓ No additional variables improved prediction. Classic LN sonographic features were not predictive of malignancy.
- ✓ Cut-off point of 0.22 provides a false negative of **0.94**
- ✓ To improve the present predictive model, a Deep Neural Network is now being explored

ACKNOWLEDGEMENTS

Project PESc is funded by:

AEER, SEPAR, SEPAR (PII)