Preoperative Systemic Immune-Inflammation Index (SII) and Pathologic Complete Response

after Neoadjuvant Therapy for Breast Cancer | Retrospective cohort with internal validation

1 Patients & exposure

429 records

427 unique patient IDs

389 patients

strict pCR available: 80 pCR (20.6%)

343 patients

primary model set: 74 pCR events

SII = platelets × neutrophils ÷ lymphocytes

(pretreatment blood; log-transformed, continuous)

2 Modelling

Clinical model

Age · cT · cN
ER · PR · HER2 IHC

+

Clinical model + log(SII)

Logistic regression
for pCR

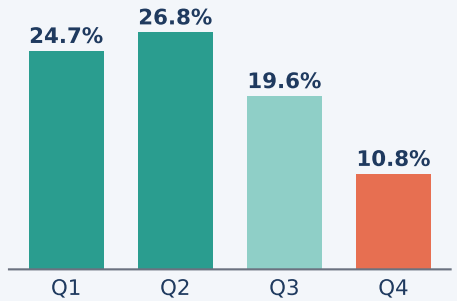
Internal validation

500 bootstrap resamples
AUC · Brier · calibration

3 SII and pCR rate

pCR rate by SII quartile

Q1 = lowest SII → Q4 = highest SII



Adjusted OR (per 1-unit log SII)

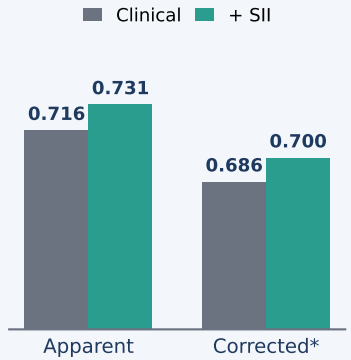
0.56

95% CI 0.37–0.85; P = 0.006

4 Added predictive value

AUC for predicting pCR

**optimism-corrected; axis truncated*



Small but consistent gain

Brier score 0.153 → 0.149
(same 343 patients)

Conclusion

Lower preoperative SII was independently associated with higher odds of pCR, and modestly improved internal predictive performance beyond clinicopathologic factors.

SII is best viewed as a low-cost adjunct to routine clinicopathologic information; external validation is still required.