537: Adherence to EndoPredict test scores for extended endocrine therapy management in the prospective EndoPredict Extended Endocrine Trial (EXET)

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BACKGROUND

- Current guidelines advise that individuals with estrogen receptor-positive (ER+) breast cancer (BC) undergo 5 years of endocrine therapy with consideration of up to 10 years of extended endocrine therapy (EET).
- The relative benefit of EET beyond 5 years is minimal for many patients, yet a significant group of patients at higher risk of late recurrence may benefit.
- EndoPredict is a gene expression assay to stratify those with high versus low BC recurrence risk and is validated to predict early and late distant metastasis up to 15 years using an EPclin score.
- In the prospective EXET study we evaluated adherence to EndoPredict test results when making decisions regarding EET.

METHODS

- Patients with prior ER+, human epidermal growth factor 2 negative (HER2-) BC underwent EndoPredict testing 4-6.5 years post diagnosis.
- Intention to extend endocrine therapy was recorded at the test result review visit.
- Firth logistic regression models were used to assess the association of EPclin risk classification (high/low) and EPclin score with therapy decision.

RESULTS

Figure 1. Distribution of EPclin scores

The dashed vertical line separates low and high-risk scores.

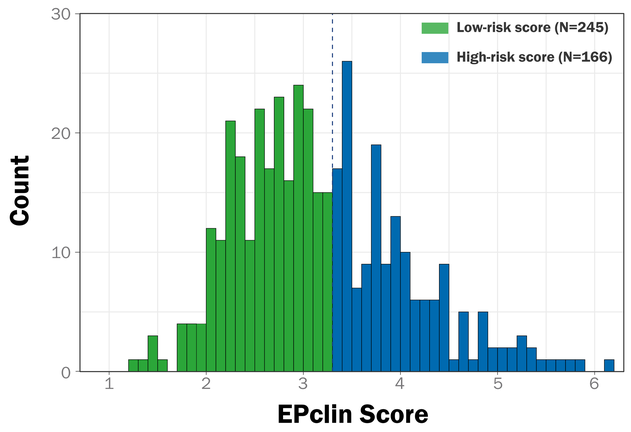

Figure 2. Rate of extended endocrine therapy in high and low risk patients

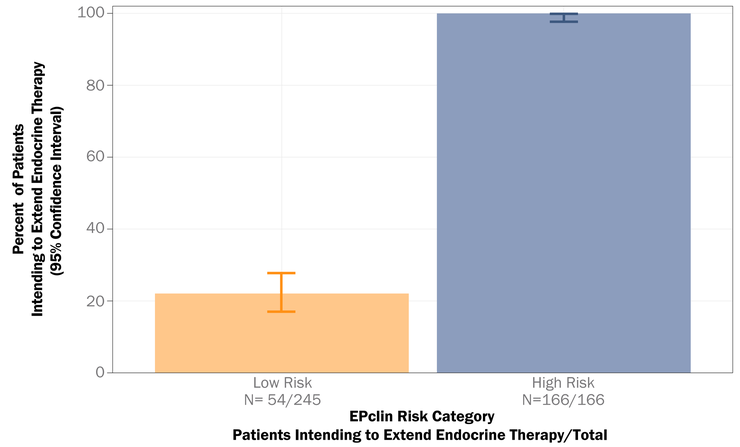

Table 1. Rates of medical intention to extend endocrine therapy

	EPclin Low Risk N	EPclin High Risk N	EPclin Low Risk (95% CI)	EPclin High Risk (95% CI)	p-value*
All patients	245	166	22% (17.0%, 27.8%)	100% (97.8%, 100%)	5.7×10^{-68}
With adjuvant chemotherapy	27	80	37.0% (19.4%, 57.6%)	100% (95.5%, 100%)	1.5×10^{-13}
Without adjuvant chemotherapy	218	86	20.2% (15.1%, 26.1%)	100% (95.8%, 100%)	2.4×10^{-43}
Lymph node negative	228	112	20.2% (15.2%, 26.0%)	100% (96.8%, 100%)	5.1×10^{-53}
Lymph node positive	17	54	47.1% (23.0%, 72.2%)	100% (93.4%, 100%)	1.4×10^{-7}

*P-values from univariable Firth logistic regression models.

Table 2. Results of multivariable Firth logistic regression predicting extended endocrine therapy intent

	OR (95% CI)	p-value*
EPclin score	20.2 (10.1, 44.0)	3.1×10^{-25}
Lymph Node Status	2.6 (1.0, 7.1)	0.04
Tumor Grade		
1	Reference	0.36
2	0.6 (0.3, 1.2)	
3	0.9 (0.3, 3.0)	
Age at Diagnosis	1.0 (0.96, 1.02)	0.40
Adjuvant Chemotherapy	1.4 (0.7, 3.0)	0.39
Tumor Stage		
T1a/b	Reference	0.93
T1c	1.1 (0.6, 2.1)	
T2	1.2 (0.5, 3.0)	
T3	0.6 (0.05, 91.5)	

*Likelihood-ratio test p-values.

- The cohort consisted of 411 patients with an average age of 62 years (range 27, 90), 107 received adjuvant chemotherapy (26%), and 71 were lymph node positive (17.3%). The distribution of EPclin scores are shown in Figure 1.
- The rate of intended EET was significantly lower for those with low-risk scores (EPclin Score ≤ 3.3) compared to high-risk scores (EPclin Score > 3.3; OR 8.5×10^{-4} [95% CI 6.8×10^{-6}, 6.0×10^{-3}], p-value 5.7×10^{-68}; Table 1, Figure 2).
- Within the low-risk group, the rate of intended EET was significantly higher in patients who were lymph node positive compared to those who were lymph node negative (p=0.015).
- A non-significant trend toward EET was seen in low-risk patients who had opted for adjuvant chemotherapy vs those who did not (p-value=0.05).
- There was no significant difference in the rate of intent to extend endocrine therapy in patients reviewing their test results ≤5 years after diagnosis and >5 years after diagnosis (OR 0.71 [95% CI 0.48-1.05], p-value=0.08).
- The EPclin score provided significant information in predicting intended EET status, even when accounting for clinical variables such as node status, tumor grade, age at diagnosis, adjuvant chemotherapy status and tumor stage (EPclin Score OR 20.2 [10.1, 44.0]; p-value=3.1×10^{-25}; Table 2).

CONCLUSIONS

- Even after adjusting for other clinical factors, for patients enrolled in our study, EndoPredict is a significant predictor of clinical decisions on intended EET.
- High adherence to EndoPredict test results in intended EET decision-making was noted in our study.
- Clinical action following intended EET treatment decisions can be analyzed in the future when follow-up data are available.

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