Impact of Neoadjuvant Endocrine Therapy on MammaPrint Index in Hormone Receptor–Positive, HER2-Negative MammaPrint Low Risk Early-Stage Breast Cancer

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CONCLUSIONS

- There was **no significant difference in MammaPrint (MP) risk category** or index score pre and post NET
- **One** patient out of 28 changed **from MP Low Risk to High Risk** and went on to experience **distant recurrence**
- There was **no change in BluePrint subtype** pre and post NET
- There was a **greater reduction in ER expression** in those who had a **higher risk MP score** post NET compared to those without
- MP results sent from pre- and post neoadjuvant ET specimens generally did not result in clinically actionable differences. **These data suggest that the MP assay could be used for tissue exposed to NET if untreated tissue is not available**
- MP as a dynamic risk marker **to stratify recurrence risk** following NET is being evaluated in the ongoing **I-SPY2 Endocrine Optimization Pilot.**

RESULTS

Table 1. Clinical characteristics

Median Age (range)	48 (31-75)
Median Follow-up (range)	35 months (0-105)
Menopausal status	
Pre	17 (61%)
Peri	2 (7%)
Post	9 (32%)
Histology	
Ductal	23 (82%)
Lobular	4 (14%)
Mixed	1 (4%)
T stage	
T1	5
T2	14
T3	9
Nodal status	
Positive	13
Negative	15
Grade	
1	6
2	20
3	2

Table 1 Cont.

Estrogen Receptor Expression	
<60%	0
60-95%	2 (7%)
>95%	25 (89%)
Unknown[1]	1 (4%)
Progesterone Receptor Expression	
0-49%	6 (21%)
50-89%	7 (25%)
>=90%	14 (50%)
Unknown[1]	1 (4%)
Ki-67	
1-14%	10
15-50%	12
>50%	0
Unknown	6 (21%)

Table 2. Type of neoadjuvant endocrine therapy

Median duration of endocrine therapy (range)[1]	5 months (0-18)
Neoadjuvant endocrine therapy	
Tamoxifen +/- OFS	3
AI +/- OFS	15
Tamoxifen followed by AI +/- OFS	8
Fulvestrant	1
OFS alone	1
Adjuvant therapy	
Adjuvant chemotherapy	11
Adjuvant ET	25
Adjuvant therapy unknown	3

RESULTS CONT.

Figure 1. MammaPrint pre and post neoadjuvant endocrine therapy

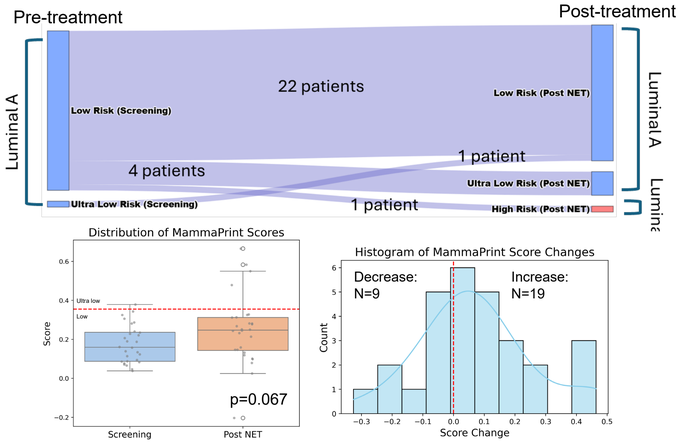


Figure 2. ER and PR expression pre and post neoadjuvant endocrine therapy

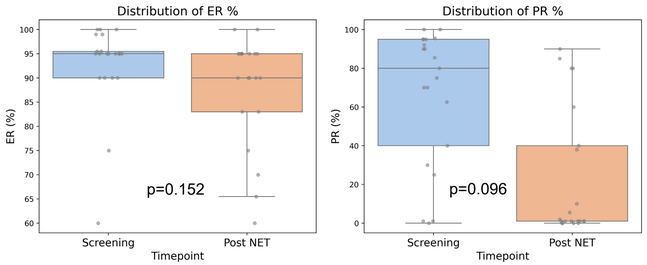


Table 3. Blueprint score pre and post neoadjuvant endocrine therapy

	Baseline	Post-NET
Blueprint Classification		
Luminal-type	28 (100%)	28 (100%)

Figure 3. ER and PR change by MammaPrint change

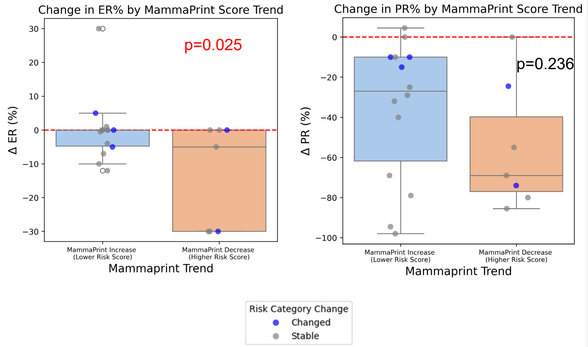
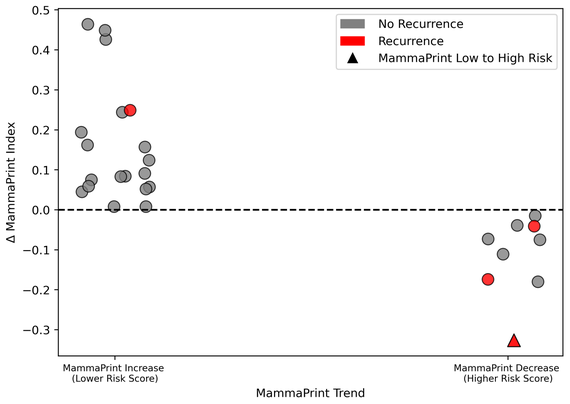


Figure 4. Recurrence by MammaPrint change



3 of 4 patients with recurrence developed a higher risk MP score

BACKGROUND

- The 70-gene MammaPrint (MP) assay is prognostic for distant recurrence and predictive of benefit from adjuvant chemotherapy (CT) in patients (pts) who have not received neoadjuvant therapy
- The MP index range is from -1 to +1 with higher index indicating lower risk of early recurrence
- Risk is categorized as MP High Risk, MP Low Risk, and MP UltraLow Risk, with only MP High Risk demonstrating benefit to chemotherapy
- There are clinical scenarios in which only tissue that has been exposed to NET is available for genomic testing, however the impact of neoadjuvant endocrine therapy on genomic testing results is unknown

METHODS

- Pts were identified through **the I-SPY Low Risk Registry (LRR),** an observational sub-study which enrolled pts with hormone receptor positive (HR+)/HER2-negative early breast cancer ineligible for the I-SPY2 trial due to MP Low Risk or UltraLow Risk status
- Pts enrolled between **2010-2020**
- Pts treated at provider discretion
- We retrospectively identified **28 patients** who underwent neoadjuvant endocrine therapy and had baseline biopsies and post-therapy surgical specimens available
- We performed **retrospective paired analyses of MP index, BluePrint category and ER/PR expression** pre and post ET
- Associations were tested using paired t-test

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