Distribution and prognostic significance of recurrence score by histologic subtype among women with early-stage hormone receptor positive invasive breast cancer

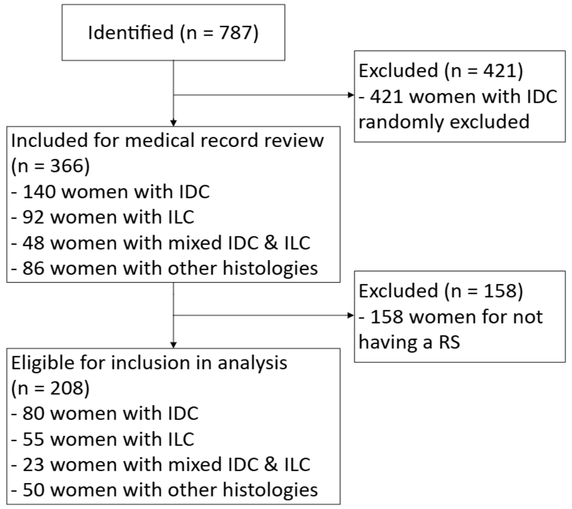
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Introduction

- Oncotype Dx Recurrence Score (RS) has been validated by TAILORx[1] and RxPONDER.[2]
- RS is both prognostic and predictive of chemotherapy benefit in women with hormone receptor-positive (HR+) breast cancer with tumor size 1-5cm and 0-3 lymph nodes involved.
- RS scores range from 1-100:
  - 0-25: favorable prognosis, no chemo benefit
  - ≥26: higher risk of distant recurrence, chemo benefit
- It is unclear whether RS can predict breast cancer outcomes by histologic type because a large proportion of women in prior studies had invasive ductal histology.[3,4,5,6,7]
- Aim: compare the clinical utility of RS by histologic type at diagnosis among women treated at an NCI-designated Comprehensive Cancer Center in Detroit, with particular attention to invasive lobular carcinoma (ILC).

Figure 1: CONSORT Diagram



Figures

Table 1: Clinical and treatment characteristics of women with invasive breast cancer by high vs. low RS

	Low RS		High RS		p-value
Patient characteristic	**N**	**%**	**N**	**%**	
Total	**179**		**29**		
Age at diagnosis					0.670
<50	42	23%	6	21%	
50-59	47	26%	8	28%	
60-69	61	34%	14	48%	
≥70	29	16%	1	3%	
Histology group					<.001
IDC	60	34%	20	69%	
ILC + Mixed*	75	42%	3	10%	
Other**	44	25%	6	21%	
Tumor size (mm), mean (std)	18.8 (10.2)		20.4 (10.9)		0.457
Regional positive lymph nodes, N					0.305
0-1	152	85%	23	79%	
1	22	12%	4	14%	
>2	5	3%	2	7%	
Chemotherapy received					<.001
No	165	92%	9	31%	
Yes	14	8%	20	69%	
Race					0.114
Non-Hispanic White	90	50%	10	34%	
All others	89	50%	19	66%	

*Mixed: lobular and ductal mixed histology
**Other: invasive micropapillary, intraductal papillary, metaplastic, mucinous, cribriform, tubular, intracystic

Table 2: Relationship between distant recurrence, RS, and treatment by histologic type

		No Recurrence		With Recurrence	
	Total	**N**	**%**	**N**	**%**
All Cases					
< 26 RS & No Chemo	165	157	95%	8	5%
< 26 RS & Chemo	14	14	100%	0	0%
26+ RS & No Chemo	9	7	78%	2	22%
26+ RS & Chemo	20	16	80%	4	20%
IDC					
< 26 RS & No Chemo	55	53	96%	2	4%
< 26 RS & Chemo	3	3	100%	0	0%
26+ RS & No Chemo	5	4	80%	1	20%
26+ RS & Chemo	15	13	87%	2	13%
ILC & Mixed					
< 26 RS & No Chemo	69	63	91%	6	9%
< 26 RS & Chemo	6	6	100%	0	0%
26+ RS & No Chemo	1	0	0%	1	100%
26+ RS & Chemo	2	0	0%	2	100%

Table 3: Distant recurrences stratified by histology

	Distant Recurrence				Total
	No	**Row#**	**Yes**	**Row#**	
Ductal	75	93.8%	5	6.3%	80
Lobular	51	92.7%	4	7.3%	55
Mixed	18	78.3%	5	21.7%	23
Other	50	100%	0	0%	50
Total	194	93.3%	14	6.7%	208

Methods and Materials

- Study population: Women ages 18-79, diagnosed between 2013 & 2022 with invasive HR+, HER2 negative, AJCC Stage I or II breast cancer
- Histologic subtypes included: ILC, mixed ILC with other histologies, and invasive ductal carcinoma (IDC)
- Medical record review was conducted using data from the Metropolitan Detroit Cancer Surveillance System (MDCSS)

Results

- 366 women were included for medical record review. 158 were ineligible due to not having RS.
- There were 14 distant recurrences after a mean of 6.7 years of follow up (5/80 women with IDC, 4/55 with ILC, and 5/18 mixed IDC/ILC)
- Too few events were identified for time-to-event analysis
- Of the women with low RS who did not receive chemo, 4% (n=2/55) of women with IDC had distant recurrence, compared with 9% (n=6/69) with ILC or mixed
- Of the women with high RS who did receive chemo, 13% (n=2/15) of women with IDC had distant recurrence, compared to 100% (n=2/2) with ILC or mixed
- Of the women with high RS who did not receive chemo, 22% (n=2/9) of women with IDC had distant recurrence, compared to 100% (n=1/1) with ILC or mixed

Conclusions & Future Work

- High RS was more common among women with IDC compared to women with ILC/mixed in this cohort of women with HR+ early-stage invasive breast cancer
- All women with invasive lobular histology and RS > 25 developed a distant recurrence, regardless of receipt of chemotherapy, though number of recurrences was small
- Multicenter evaluation with larger database is needed to increase ILC subset

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