Omitting OncoType Dx Genomic Testing in Ultra Low-Risk Breast Cancer

Megha Schmalzle[1,2], Rachel Radigan, MPH[1,2], Shridevi Singh, MD[3], Wei Liu, MD[4], Kathy Deng, MD[3], Meytal Fabrikant, MD, MS[3], Manjari Pandey, MD[3], Sophia Fu, MD[3], Johnny Kao, MD[1,2]

(1) New York Institute of Technology College of Osteopathic Medicine (2) Good Samaritan University Hospital, Department of Radiation Oncology (3) The Cancer Institute at Good Samaritan University Hospital (4) Good Samaritan University Hospital, Department of Pathology

Introduction

- Older women with early-stage luminal A breast cancer have an excellent prognosis with a 5-year relative survival >99%[1]
- Research on curtailing overtreatment have challenged established standards of care by reducing the use of whole breast radiotherapy and selectively omitting sentinel lymph node biopsy[2,3]
- There are spare data investigating whether Oncotype Dx genomic testing could be prognosticated among a select cohort of low-risk breast cancer patients with a favorable outcome

Objective

- Objective: To investigate whether clinical, pathological, and immunohistochemical analysis routinely performed at a high-volume community hospital breast program could predict Oncotype Dx results
- Endpoints
  - Primary: The proportion of patients with low risk (0-18), intermediate risk (19-25) or high risk (26-100) Oncotype Recurrence Scores (RS)
  - Secondary: Disease recurrence and overall survival

Methods

- The Good Samaritan University Hospital Cancer Registry was queried to identify consecutive breast cancer patients from 2014 to 2022 (n=1,711)
- Out of this population, 91 patients met the following eligibility criteria:
  - Age ≥60
  - ER positive, PR positive, HER2 negative
  - Pathologic stage T1b-T2N0
  - Well to moderately differentiated
  - No lymphovascular invasion
  - Ki-67 ≤13.25%
- Patient characteristics, treatment, and follow-up were obtained through review of electronic medical records and public vital records

Results

CHARACTERISTIC	N	%
Age (yrs)		
Median (IQR)	70 (65-74)	
Distribution of age (yrs)		
60 to <70	44	48.4
70 to <80	39	42.9
≥80	8	8.8
Median tumor size (mm) (IQR)	10 (7-15)	
5.1 to 10	47	51.6
10.1 to 20	36	39.6
>20	8	8.8
Tumor grade		
1	52	57.1
2	39	42.9
Histologic cancer type		
Ductal	65	71.4
Lobular	15	16.5
Tubular	0	0.0
Mucinous	4	4.4
Other#	7	7.7
Surgery Type		
Lumpectomy	72	79.1
Mastectomy	19	20.9
ER%		
<90%	3	3.3
90-100%	88	96.7
PR%		
<50%	7	7.7
50-80%	16	17.6
81-100%	68	74.7
Laterality		
Left	45	49.5
Right	45	49.5
Bilateral	1	1.0

Table 1: Baseline characteristics of eligible patients (n=91).

Out of the 7 patients with a histologic cancer type as "other," 4 had a combination of ductal and lobular carcinoma, 2 had papillary carcinoma, and 1 had a combination of ductal and mucinous carcinoma.

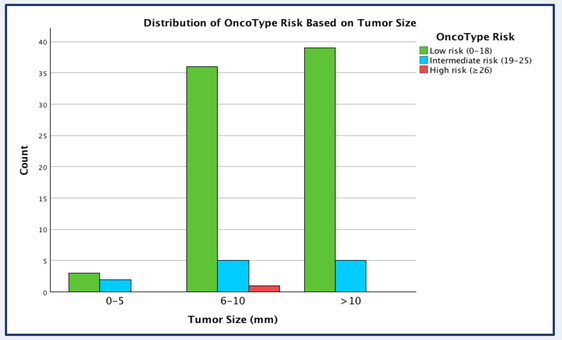


Figure 1: Bar chart illustrating the distribution of Oncotype Dx risk categories stratified by tumor size.

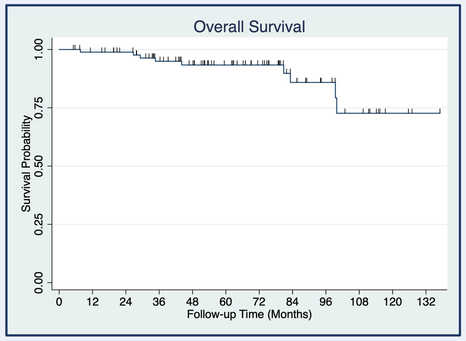


Figure 2: Kaplan-Meier curve showing overall survival of patients diagnosed with ultra low-risk luminal A breast cancer.

- 78 (85.7%) patients had a low risk Oncotype Dx RS and 12 (13.2%) patients were intermediate risk
- Only 1 patient had a high risk RS of 26
- 5-year local control was 100%; 5-year overall survival was 93.3%
- To date, no patients have clinical evidence of metastases
- A total of 10 deaths occurred, none related to breast cancer

Discussion

- Results of a recent study show no survival benefit in older women with ER+/HER2- high-risk breast cancer who were treated with ET + chemotherapy vs. ET alone[4]
- If these women labeled as high risk based on genomic testing experienced positive outcomes with ET alone, then it's reasonable to suggest ultra low risk patients may not even require Oncotype testing
- In this study, no patient succumbed to breast cancer despite not receiving chemotherapy and therefore Oncotype testing could not have further improved outcomes

Contact Information

- Presenter: Megha Schmalzle, mschma01@nyit.edu
- Principal investigator: Johnny Kao, MD, johnny.kao@chsli.org

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