

#56P - The impact of tumor detection method on genomic and clinical risk and chemotherapy recommendation in early hormone receptor positive breast cancer

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Background

- Symptomatic breast cancers share aggressive clinico-pathological characteristics compared to screen-detected breast cancers.
- The decision to administer adjuvant chemotherapy for early hormone receptor positive (HR+) HER-2 negative (HER2-) breast cancer patients, is guided by both the genomic and the clinical risk of disease recurrence.
- We assessed the association between the method of cancer detection and genomic and clinical risk, and its effect on adjuvant chemotherapy recommendations.**

Methods

- Patients with early hormone receptor positive (HR+) HER2neu-negative (HER2-) breast cancer, and known OncotypeDX Breast Recurrence Score test were included.
- A **natural language processing (NLP)** algorithm was used to identify the method of cancer detection.
- Genomic risk** was assessed with OncotypeDX.
- Clinical risk** was determined using tumor size, grade and nodal status (as in MINDACT study).
- The clinical and genomic risks of symptomatic and screen-detected tumors were compared.

Characteristics	Screen-detected (n=216)	symptomatic (n=185)	p value
Age (mean)	61	53	< .00001
Tumor size			
≤ 2cm	178 (82.4%)	99 (53.5%)	< .00001
> 2cm	38 (17.5%)	86 (46.4%)	
Histologic grade			
G1: Well dif.	7 (3.2%)	9 (4.8%)	.14
G2: Moderately dif.	163 (75.4%)	122 (65.9%)	
G3: Poorly dif.	43 (19.9%)	49 (26.4%)	
Missing data	3 (1.4%)	5 (2.7%)	
Lymph Node			
N0	161 (74.6%)	136 (73.5%)	.78
N1mic	11 (5.1%)	14 (7.6%)	
N1	30 (13.9%)	24 (13%)	
N2-N3	14 (6.5%)	11 (6%)	

Conclusions

- There is a strong association between the **method of cancer detection** and the genomic and clinical risk of recurrence in HR+ early breast cancer patients.
- Based on our data and current guidelines, most young women presenting with symptomatic breast cancer will be recommended for adjuvant chemotherapy.

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Women with symptomatic cancer have higher clinical risk and higher genomic risk for disease recurrence

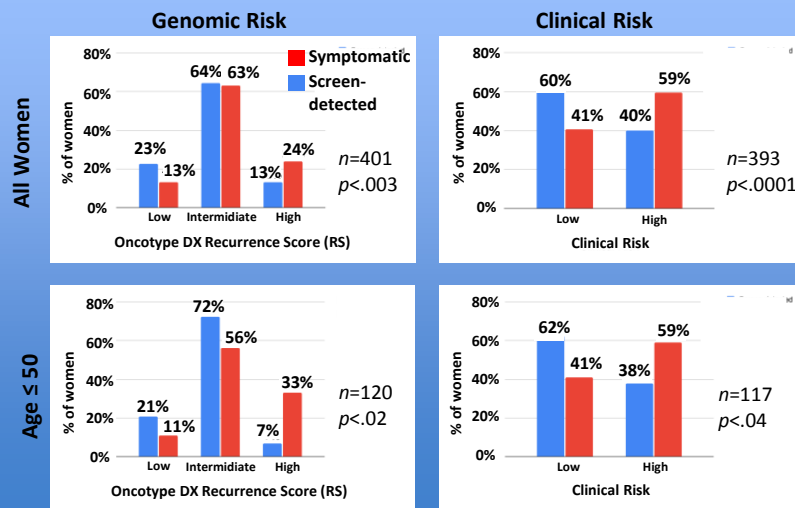


Figure 2. Genomic and Clinical risk distribution by the initial method of cancer detection.

Table 1. Patient and tumor characteristics by method of detection.

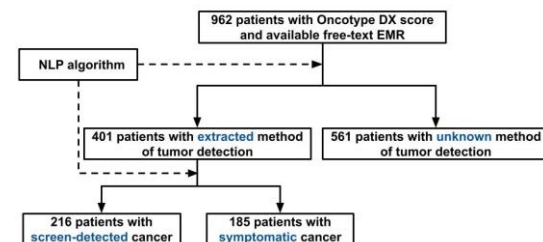


Figure 1. Study flow diagram and implantation of NLP algorithm. Abbreviations: NLP, Natural language processing; EMR, Electronic medical records

Symptomatic cancer significantly increases the likelihood of adjuvant chemotherapy in young women

Age ≤ 50 (n=117)					
	Symptomatic (n=88)		Screen-detected (n=29)		p value
Clinical Risk	Low	High	Low	High	
RS<16	14.7%	21.5%	41.3%	13.7%	
16<= RS<=20	6.8%	9%	10.3%	13.7%	
20<RS<=25	9%	6.8%	6.8%	6.8%	
RS>25	10.2%	21.5%	3.4%	3.4%	
Adj. Chemotherapy	57%		35%		p=.03
Age > 50 (n=276)					
	Symptomatic (n=88)		Screen-detected (n=29)		p value
Clinical Risk	Low	High	Low	High	
RS<=25	37%	48%	55%	30%	
RS>25	3%	12%	4%	10%	
Adj. Chemotherapy	15%		14%		

Table 2. Probability of adjuvant chemotherapy recommendation by the initial method of cancer detection. Colored boxes represent patients who are candidates for adjuvant chemotherapy.