Age and Grade as a Function of Decision Score in Women Diagnosed with DCIS

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PURPOSE/OBJECTIVE(S)

Proper selection of patients with ductal carcinoma in situ (DCIS) for adjuvant radiation therapy (RT) after breast conserving surgery (BCS) remains a challenge. Clinico-pathologic factors are routinely used to grossly stratify women into low, intermediate and high-risk groups for treatment. However, EBCTCG data has shown that clinico-pathologic provides limited utility for risk stratification. A new predictive and prognostic DCIS biosignature (PreludeDx, Laguna Hills, CA) validated in multiple cohorts, assessed discordance of Decision Score (DS) with a variety of clinical factors used to make treatment decisions.

MATERIAL & METHODS

De-identified datasets from DCIS studies performed in Sweden (n= 1,046) and the US (n= 455 and 296) were combined into a single dataset, totaling 1,797 women. Women with positive surgical margins or incomplete biomarkers (n= 328) were excluded. Women were grouped by age, tumor size, nuclear grade and RTOG 9804-like criteria (screen detected, extent ≤ 2.5 cm, grade < 3 and no ink on tumor, since distance to margin status was not available for some of the cases). Differences in contingency tables were assessed using Chi-Square analysis with an alpha level of 0.05.

RESULTS

Using 9804-like criteria (low and intermediate grade, size <2.5 cm, negative margins), 43% of women presenting as 9804 low risk were reclassified to elevated risk by DS (p < .0001). In women <50, 48% were at low risk by DS, while 52% of women were at elevated 10-yr total IBE risk. In women over 70, 23% were low risk by DS and 77% were at elevated risk (p < .0001). In women with low to intermediate grade, 52% were at low risk by DS, while 48% of women were at elevated 10-yr total IBE risk. In women with high grade, 34% were low risk by DS and 66% were at elevated risk (p < .0001).

- Clinicopathologic factors have limited utility to identify a true low risk group

- 48% of women under the age of 50 are Low Risk by DCISionRT

- 48% of women with low to intermediate grade are Elevated Risk by DCISionRT
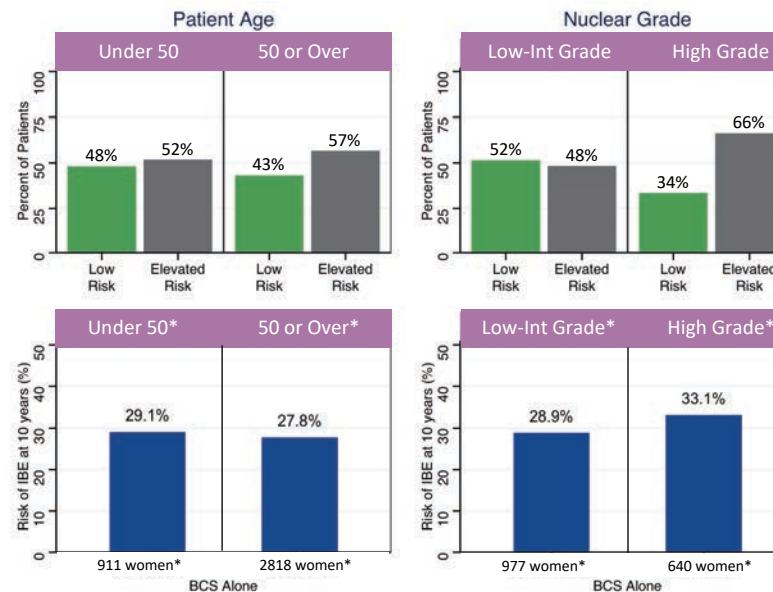
* Early Breast Cancer Trialists' Collaborative Group (EBCTCG), Correa C, McGale P, et al. Overview of the randomized trials of radiotherapy in ductal carcinoma in situ of the breast. J Natl Cancer Inst Monogr. 2010;2010(41):162-177. doi:10.1093/jncimonographs/lgq039

Table 1. Clinicopathology bs DS Risk Groups

Group	Criteria	Low Risk	%	Elevated Risk	%	Total
Age						
	Under 50	168	48%	181	52%	349
	50 or over	484	43%	636	57%	1120
	70 or over	49	23%	162	77%	211
Tumor Size**						
	1-10 mm	343	51%	336	49%	679
	10-25 mm	135	35%	246	65%	381
	Over 25 mm	41	32%	87	68%	128
Nuclear Grade**						
	Low-Int grade	448	52%	421	48%	869
	High grade	194	34%	384	66%	578
RTOG9804-like**						
	Good Risk	243	57%	187	43%	430
	Not Good Risk	291	38%	473	62%	764

** Tumor size (n=281), nuclear grade (n=22) or RTOG-like criteria (n=275) was unknown for some pts.

CONCLUSION

In this analysis, DS for women under 50 demonstrated a bi-modal distribution to the very low and very high biological risk of DCIS recurrence or development of invasive breast cancer over 10 years. This differs from the opinion that the majority of women under 50 are at high risk. Additionally, there is a significant subset of women of 70 years or older treated with BCS who remain at elevated risk of recurrence or development of invasive disease and may require the addition of RT to effectively manage risk. Approximately half of patients with low to intermediate grade were at elevated risk by DCISionRT. Lastly, DS reclassified close to half of women with low risk by 9804-like criteria to an elevated risk profile, potentially identifying a group of women who would be under-treated with surgery alone.

#ASTRO20