[221] Prediction of Local Recurrence in Ductal Carcinoma In Situ: Clinical Validation of DCIS Score

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Background: The Ontario DCIS population-based study identified women with pure DCIS from 1994-2003. We reported the DCIS Score (DS) clinical validation results (Rakovitch, SABCS 2014) showing prediction of risk of an ipsilateral local recurrence (LR). Here we evaluate the correlation between the DS and clinicopathologic features, and whether DS provides independent LR risk information in pts treated w/ breast conservative surgery (BCS).
Design: Pathology was centrally reviewed for: focality (multifocality=at least 2 foci of DCIS 5mm apart), size, grade, subtype, comedo necrosis & clear margins, (CM=no ink on tumor). The DS was obtained by quantitative RT-PCR. Cox modeling was used to determine the relationship between independent covariates, DS (hazard ratio (HR)/50 units) & LR.
Results: DCIS Score was evaluated in 718 women w/ DCIS tx with BCS alone (571 w/ CM). With a median follow-up of 9.4 years, 100 BCS alone w/ CM cases developed LR (44 DCIS, 57 invasive). In the primary analysis, among 571 pts treated by BCS alone with CM the continuous DS was significantly associated with LR in ER+ pts (HR 2.26; 95%CI 1.41,3.59; P=0.001) and in all pts (HR 2.15; 95%CI 1.43,3.22; P=<0.001). Univariable analyses showed that the DS, multifocality, size, histologic subtype, grade, and comedo necrosis were statistically significant predictors of LR risk. 10 yr Kaplan-Meier LR rates (95%CI) for all BCS pts alone w/ CM were: low risk DS 12.7% (9.5%, 16.9%); int risk DS 33.0% (23.6%, 44.8%) & high risk DS 27.8% (20.0%, 37.8%). In multivariable analysis, hazard ratios for factors associated with LR were: multifocality: 1.97 (95% CI 1.27-3.02); size: 2.07 (1.16-3.83); age<50: 1.75 (1.07-2.76); DS/50: 1.69 (1.08-2.62) & tumor subtype: solid vs. cribriform, 1.63 (0.97- 2.88). Patients with low DS and non-multifocal disease have a 9.7% risk of any local recurrence (4.3% for DCIS and 5.6% for invasive) at 10 yrs. DCIS Scores were widely distributed within each subgroup defined by the clinical and pathology characteristics. TheDS is only moderately correlated w/ grade, comedo necrosis and size (Spearman correlations <0.48).
Conclusions: For DCIS pts treated with BCS alone the DCIS Score, focality, tumor size and histologic subtype provide independent LR information. Pts with low DCIS score and non-multifocal disease may be considered for BCS alone.
Category: Breast Pathology

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