THE CURRENT MANAGEMENT OF DCIS.

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Prior to the use of screening mammography, DCIS was infrequently diagnosed. Clinical presentations of DCIS (masses, nipple discharge, Paget's disease) accounted for only about 2% of cancers. Currently, in populations which are screened regularly, approximately 30% of new cancer diagnoses are DCIS. This has led to concern that mammography may lead to the overdiagnosis of DCIS, and that some DCIS detected in this way may never become clinically relevant. Since there is no information on the natural history of mammographically detected, untreated DCIS we studied a cohort of 41,837 women followed for 371,477 women years to examine the relationship between risk factors for DCIS and invasive cancer. During the study period, 1520 cancers developed. DCIS and invasive cancer shared common risk factors, and the magnitude of risk for both conditions was similar (1) These findings suggest that DCIS and invasive cancer are part of the same disease process.

The initial treatment for DCIS was mastectomy. Mastectomy results in long-term survival for 96% - 99% of women, regardless of the size, grade, or histologic type of DCIS. However, in an era of breast conserving therapy for invasive carcinoma, it is difficult to justify the routine use of mastectomy for DCIS. Nonrandomized studies of the treatment of DCIS with excision and radiation (RT)have reported 10-year local recurrence rates of approximately 15%(2). Half of the local recurrences are invasive carcinoma, and the 15-year cause specific mortality is 4% with this approach. Other studies have questioned the need for RT to be routinely used for the treatment of DCIS. Silverstein et al (3) devised the Van Nuys Prognostic Index (VNPI), in which size, grade, and margin width were each assigned a score of 1 to 3. Using retrospective data, it was determined that patients with the lowest VNPI scores (3 or 4) did not benefit from RT. In an update of this work, it was suggested that only margin status was important in determining the need for RT, and that patients with margins of 1cm or more did not benefit from RT (4). These studies suffer from all the potential pitfalls of retrospective data collection over a long time period. Two prospective, randomized trials have directly addressed the benefits of RT in DCIS. The first, NSABP B17, randomized 814 women to treatment with excision to negative margins (defined as tumor filled ducts not touching an inked surface) or excision and RT. After 90 months of follow up, the use of RT reduced the incidence of invasive recurrence from 13.4% to 3.9% ($p=0.00005$) and the

incidence of recurrent DCIS from 13.4% to 8.2% (p=0.007)(5). Subset analysis failed to identify a group who did not benefit from RT, with patients with low-grade, noncomedo DCIS with negative margins having a 7% absolute reduction in recurrences at 8 years (6). A second trial from the EORTC (7) randomized more than 1000 women to treatment with excision alone or excision and RT. After 4 years, a 7% reduction in recurrences was seen in the RT group. These randomized trials would suggest that although the magnitude of benefit obtained with RT varies, all patients with DCIS will have the risk of local failure reduced with this treatment. An additional randomized trial (NSABP B21) has shown that the addition of tamoxifen to excision and RT reduces the risk of both ipsilateral and contralateral breast events from 13.4% to 8.2% at 4 years(8). Controversy has recently arisen regarding the use of sentinel node (SN) biopsy in DCIS. Immunohistochemistry of the SN is reported to be positive in up to 10% of cases of DCIS. However, extensive data from axillary dissection demonstrates that nodal metastases are present in only 1% - 2% of mammographically detected DCIS, and long-term survival rates of 98% -99% are not compatible with a 10% incidence of nodal metastases. We reserve sentinel node biopsy in DCIS for patients with large areas of DCIS who require mastectomy, where the risk of invasion is high and it is not possible to perform SN biopsy as a second stage procedure.

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