

## **Long term Outcomes of Ductal Carcinoma In Situ of the Breast. A Systematic Review and Metaanalysis**

K. E. Stuart<sup>1</sup>, N. Houssami<sup>2</sup>, R. Taylor<sup>3</sup>, J. Boyages<sup>1,4</sup>

*1Westmead Breast Cancer Institute, Westmead NSW, Australia, 2School of Public Health, Sydney Medical School, University of Sydney, Sydney NSW, Australia, 3School of Public Health and Community Medicine, Faculty of Medicine, University of New South Wales, Randwick NSW, Australia, 4Sydney Medical School, University of Sydney, Sydney NSW, Australia*

**Purpose/Objective(s):** A systematic review was undertaken to define 10 year local recurrence and breast cancer case fatality for women with ductal carcinoma in situ (DCIS) under different treatment modalities.

**Materials/Methods:** A meta-analysis of observational studies was conducted. Studies eligible for inclusion reported data where all subjects (or subgroups): (1) were diagnosed with pure DCIS, (2) had a minimum median/mean follow-up of 10 years, (3) had details provided on type of surgery (mastectomy, breast conservation or biopsy only) and radiation therapy (RT) received, and (4) had ipsilateral local recurrence (ILR) by local treatment reported. All published studies were considered; no language, publication date or study-type restrictions were imposed. Evaluation of the heterogeneity of all studies, individually and by treatment type, and the calculation of the pooled proportions (overall and by treatment type) was undertaken by variance weighting according to the method described by Berry for small numbers. Fixed or random effects models were used as appropriate with confidence intervals (95% CIs) of pooled proportions derived from the normal approximation of the binomial.

**Results:** Eighteen observational studies were eligible for inclusion in the meta-analysis, providing a total of 3069 women diagnosed with DCIS. At 10 years follow-up, the proportion of any ILR for women treated by mastectomy (Mx) was 3.3% (95% CI, 0.9 – 5.7), for breast conserving surgery (BCS) with RT was 14.7% (95% CI, 12.8 – 16.6), for BCS alone was 24.2% (95% CI, 16.9– 31.4), and for biopsy only (Bx) was 35.1% (95% CI, 13.2 – 57.0). Outcomes for the Bx group were also reported at 15 years and showed an ILR of 45.4% (95% CI, 17.5 – 73.4). Breast cancer case fatality at 10 years was similar in the Mx (1.89%, 95% CI, 0.06– 3.72), BCS+RT (3.33%, 95% CI, 2.34 – 4.32) and BCS alone (2.5%, 95% CI, 1.59 – 3.42) groups, but was higher at 7.03% (95% CI, 2.06 – 11.46) in the Bx only patients (although 95% CIs overlapped). By 15 years, breast cancer case fatality rate in the Bx only women was 11.36% (95% CI, 5.95 – 16.78) and was particularly high (36.59%, 95% CI, 21.84 – 51.33) for those with an invasive local recurrence.

**Conclusions:** More extensive local intervention was associated with greater local control in DCIS with 10 year follow-up. Breast cancer case fatality was similar for the Mx, BCS+RT and BCS groups. The highest proportion of ILR and breast cancer case fatality was in the Bx group at 10 years, which further increased by 15 years.