# Outcomes of Treatment for Screen-Detected DCIS in Geelong

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## INTRODUCTION

Ductal carcinoma *in situ* (DCIS) of the breast is more commonly diagnosed as a result of population-based screening. Management of screen-detected DCIS remains controversial. We aim to investigate the factors associated with recurrence of disease for patients with screen-detected DCIS in Geelong, Australia.

## METHODS

Retrospective cohort study of patients diagnosed with pure DCIS through Breast Screen Victoria in Geelong between 01/01/2002 to 31/12/2012 inclusive. Geelong Breast Screen database and medical records were examined to record patient demographics, radiology, pathology, treatment/s, recurrence and mortality. Cox Proportional Hazard models were used to determine continuous variables.

## RESULTS

144 eligible patients were identified. Median age at diagnosis was 60.6 years. 44 (30.6%) patients underwent mastectomy. 100 (69.4%) patients underwent breast conserving surgery (BCS) +/- radiotherapy (59/100, 59%). Average length of follow-up was 7.23 years. The crude recurrence rate was 10.4% (15/144) with 10 *in situ* breast recurrences and 5 invasive breast recurrences. There were no cases of distant recurrence. There were no cases of breast cancer-related mortality. High and intermediate tumour grade (*P*=0.019) were associated with an increased risk of recurrence (Table 1). There were no cases of recurrence for patients with low grade DCIS. There was no statistically significant difference in recurrence rates overall for those who had mastectomy (0/44, 0%), compared to BCS (15/100, 15%). For those who had BCS, the recurrence rate was significantly lower for those who had adjuvant radiotherapy (5/59, 8.5%), compared to those who did not (10/41, 24.4%) (*P*=0.044) (Table 2). Within the BCS group, smaller tumour size was also associated with a lower rate of recurrence (*P*=0.035) (Table 1).

## TABLE 1: Clinicopathologic Features

| | |
|---|---|
| Median age, years (range) | 60.6 (40.7 – 77.9) |
| Grade<br>Low, n (%)<br>**Intermediate, n (%)**<br>**High, n (%)** | <br>11 (7.6)<br>**26 (18.1)**<br>**107 (74.3)** ← **Increased risk of recurrence, *P*=0.019** |
| Necrosis, n (%) | 111 (77.1) |
| **Average path size, (mm) (range)** | **26.1 (0, 110)** ← **Increased risk of recurrence within BCS group for larger tumour size, *P*=0.035** |
| Multifocal, n (%) | 27 (18.8) |
| Mastectomy, n (%) | 44 (30.6) |
| BCS, n (%) | 100 (69.4) |
| Sentinel lymph node biopsy, n (%) | 44 (30.6) |
| Radiotherapy<br>Number patients, n (%)<br>Average dose (Gy)<br>Additional boost, n (%) | <br>59 (41.0)<br>50<br>25 (43.1) |
| Endocrine therapy, n (%) | 6 (4.2) |

## TABLE 2: Outcomes

| | |
|---|---|
| Total recurrences, n (%) | 15 (10.4) |
| Average years to recurrence, (range) | 4.47 (1.29 – 9.98) |
| Recurrence type, n (%)<br>In situ, DCIS<br>Invasive, IDC<br>Invasive, mixed IDC/ILC | <br>10 (66.7)<br>4 (26.7)<br>1 (6.67) |
| Recurrence site, n (%)<br>Local, breast<br>Local, axilla<br>Distant | <br>15 (100)<br>3 (20)<br>0 |
| Recurrence per treatment, n (%)<br>Mastectomy<br>BCS alone<br>**BCS + radiotherapy** | <br>0/100 (0)<br>10/41 (24.4)<br>**5/59 (8.5)** ← **Decreased risk of recurrence for those who had BCS + radiotherapy vs. BCS alone, *P*=0.044** |
| Mortality, n (%)<br>Deaths | <br>2 (1.39) |
| Cause of death, n (%)<br>Non-breast cancer related<br>Breast cancer related | <br>2 (100)<br>0 |
| Average time to death, (years) | 9.90 |

## CONCLUSION

Higher tumour grade and larger tumour size are associated with an increased risk of recurrence for DCIS. For those undergoing BCS, adjuvant radiotherapy reduces the risk of recurrence. DCIS of low grade and small size may represent a subset for which treatment de-escalation is appropriate. Further research to identify biomarkers of recurrence risk is indicated.