O-81 THE IMPACT OF CASELOAD ON PRACTICE PATTERNS IN BREAST CANCER: EVIDENCE FROM THE UK BREAST SCREENING PROGRAMME

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Studies examining the relationship between caseload and surgical practice in breast cancer have generally involved a small number of units or patients, and have been based on outdated practice patterns. We aimed to examine the caseload volume of screening units and individual breast cancer surgeons, and to investigate the relationship between these volumes and practice patterns in the contemporary setting.

The non-operative and operative history of screen-detected breast cancers, diagnosed in women who were screened between 2000 and 2008 within the UK Breast Screening Programme, was extracted from national databases. This information was then correlated with unit- and individual surgeon caseload.

There were 14,008,192 screening events and 110,912 cancers detected over the study period. No differences were seen between practice patterns in the low- versus high-volume units. The percentage of surgeons seeing $\geqslant$30 cases of breast cancer per year rose from 35.4% to 51.6%, whilst the number of surgeons responsible for <10 cases annually decreased from 32.9% to 23.5%, over the study period. There was a positive correlation between the number of cancers seen by individual surgeons and the rate at which they employed SNB ($p < 0.001$), and performed immediate breast reconstruction ($p < 0.001$).The number of mastectomies performed was approximately 4% lower in surgeons with high caseload versus those with a low caseload ($p = 0.035$).

Whilst many surgeons are still practicing out-with ABS at BASO guidelines, significant improvements have been made. The important variable in terms of practice patterns is the number of cancers each individual surgeon deals with; the caseload of individual units is less important.

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O-82 THE INFLUENCE OF MODE OF PRESENTATION ON THE PATTERN OF RECURRENCE IN EARLY BREAST CANCER (EBC)

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Introduction: An early peak in recurrence exists in women with EBC. This may be explained by underlying tumour biology or a reaction to surgery. Screen detection has been shown to have a prognostic effect independent of disease stage suggesting a connection with underlying tumour biology. We aim to determine if the pattern of recurrence differs between modes of presentation.

Methods: Data from 3 centres in Glasgow of consecutive women aged between 50 and 65 years with early stage breast cancer (EBC) diagnosed between 1995 and 2001 were examined. Recurrence was defined as invasive disease at any site. Patients were grouped by mode of presentation into screen detection and symptomatic. Kaplan–Meier and time dependent Cox analysis were performed.

Results: Women (1534) were included with a median follow-up of 5.5 years. Mode of presentation was screening in 1007 (65.6%) women. At 2.5 years cumulative recurrence was 2.5% (95% CI 1.5–3.5) in the screen detected group and 9.7% (7.2–12.2) in the symptomatic group. At 5 years the corresponding rates were 7.8% (6.0–9.6) versus 19.1% (15.6–22.6). Time dependent multivariate analysis showed that the difference in the risk of recurrence between the modes of presentation was significantly different within 2.5 years from diagnosis compared with later than 2.5 years ($p = 0.019$). The hazard ratio for recurrence within 2.5 years was 0.59 (95% CI 0.34–1.00, $p = 0.05$) and after 2.5 years was 1.23 (0.84–1.80, $p = 0.285$).

Conclusions: These results suggest that women with screen detected cancers have a better prognosis initially following diagnosis independent of disease stage but that this benefit does not persist.

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O-83 DIGITAL INFRARED IMAGING FOR BREAST CANCER DETECTION IN YOUNGER WOMEN UNDERGOING BREAST BIOPSY

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Background: Mammography has a lower sensitivity for breast cancer detection in younger women and those with dense breasts. Recent improvements in digital infrared breast imaging suggest there may be a role for this technology and we have studied its performance in 100 women prior to breast needle core biopsy (CB) with ethical approval.

Methods: All patients were imaged using a digital infrared breast (DIB) scan (Sentinel BreastScan™) prior to breast biopsy. Analysis of the infrared scans was performed, blinded to biopsy results, in four different ways: Sentinel screening report, Sentinel artificial intelligence (neural network), expert manual review and NoTouch BreastScan a novel artificial intelligence programme.

Results: Of 106 biopsies performed in 100 women 65 were malignant and 41 were benign. Sensitivity of Sentinel screening (53%) and Sentinel neural network (48%) was low but analysis with NoTouch software (70%) was much closer to expert manual review (78%). Sensitivity (78%) and specificity (75%) using NoTouch BreastScan were higher in women under 50 and the combination of mammography and DIB, with NoTouch interpretation, in this age group resulted in a sensitivity of 89%.

Conclusion: DIB using NoTouch BreastScan is an effective adjunctive test for breast cancer detection in women under 70 and appears to be particularly effective in women under 50 where maximal sensitivity (78%) and specificity (75%) were observed. The combined sensitivity of NoTouch BreastScan and mammography in women under 50 was encouraging at 89%, suggesting a