

# 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surgical practice in breast cancer have generally involved a small number of units or patients, and have been based on outdated practice patterns.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  $\geq 30$  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 can-

cer (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

potential way forward for a dual imaging approach in this younger age group.

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#### O-84 AN OBSERVER PERFORMANCE STUDY COMPARING THE INTERPRETATION OF FULL-FIELD DIGITAL MAMMOGRAPHY WITH DIGITAL BREAST TOMOSYNTHESIS

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**Objective:** The purpose of the current study was to compare the diagnostic accuracy of two-view full-field digital mammography (FFDM) with co-registered two-view digital breast tomosynthesis (DBT).

**Methods:** The ethics committee approved trial evaluating a Hologic Selenia Dimensions machine recruited women recalled after their initial breast screening using analogue film-screen mammography, scheduled to undergo further breast assessment following informed consent. Radiologists fulfilling the professional criteria for National Health Service Breast Screening Programme's radiology practice reviewed all images using the Royal College of Radiologists Breast Group classification for mammographic features 1–5 (M1 = normal, M2 = benign, M3 = probably benign, M4 = suspicious, M5 = malignant).

**Results:** The study included bilateral mammograms of 526 women (age range 47–73 years) with 119 (22.6%) histologically proven primary breast cancers assessed by 5 readers.

Using receiver operating characteristic (ROC) test, the analysis yielded statistically significant difference ( $p = 0.0001$ ) between FFDM and DBT. The area under the ROC curve (AUC) was  $0.968 \pm 0.007$  for DBT compared to AUC of  $0.913 \pm 0.015$  for FFDM, demonstrating DBT interpretation was superior.

**Conclusion:** Patients recalled after routine screening mammography will benefit from DBT as an additional technique for diagnostic workup.

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#### O-85 WHAT DO CLINICIANS IN THE UK DO ONCE A PATIENT HAS RECEIVED 5 YEARS OF ADJUVANT HORMONAL AROMATASE INHIBITOR (AI) CONTAINING TREATMENT?

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**Background:** NICE guidelines advocate use of AIs within licence for all but low risk patients. Early discharge at three years is also recommended. To gauge interest in extended adjuvant endocrine therapy research treatment practice and follow up practice needs to be understood.

**Methods:** A survey designed to capture current practice for ER positive, post-menopausal women who have completed 5 years of treatment with an AI was distributed to 774 oncologists and surgeons from 285 centres across the UK. The survey also captured opinion on a proposed trial of further treatment in this patient group.

**Results:** A total of 159 clinicians (65 clinical oncologists; 28 medical oncologists; 63 surgeons and 3 others) responded to the survey, representing 102 hospitals. The most common time for routine discharge was 5 years regardless of nodal involvement 58% vs 12% before and 23% after 5 years. Patients with more than 4 nodes positive were discharged later than 5 years by 36% respondents. The majority of respondents discontinue AIs at 5 years for node negative but continue AI use beyond 5 years in node positive cases.

92% of responders expressed interest in participating in a clinical trial of extended endocrine therapy most frequently selecting node positive cases as the target population.

**Conclusions:** There is substantial variation in follow-up practice and treatment for ER positive, post-menopausal women following 5 years of AI containing endocrine therapy within the UK. Many clinicians would support a clinical trial of extended hormone therapy in node positive patients.

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#### O-86 MASTECTOMY AND RECONSTRUCTION IN STAGE IV BREAST CANCER: A SURVEY OF UK BREAST AND PLASTIC SURGEONS

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**Introduction:** The number of women with stage IV disease who have primary or delayed breast reconstruction is small. The primary aim of this study was to establish current UK practice and opinions with regards to the appropriateness of breast reconstruction in stage IV disease.

**Methods:** All 485 full members of the Association of Breast Surgeons (ABS) and all 378 full members of the British Association of Plastic Reconstructive and Aesthetic Surgeons (BAPRAS) were invited by email to take part in an online survey.

**Results:** Of the breast surgeons, 101 responded (26.9%). Of the plastic surgeons 59 responded (16%). 78.9% would operate on the primary tumour, mainly for local control. Plastic surgeons showed a propensity for immediate reconstruction compared to their breast surgery colleagues, and 26.6% of breast surgeons would not offer reconstruction at all. Immediate latissimus dorsi (LD) flap and implant was the favoured method in early stage disease (100%), with delayed LD and implant the most popular option for stage IV disease (77.0%).

In patients who have already had a mastectomy, the majority (54.4%) would offer reconstruction if stability of disease progression has been demonstrated.