

only) discharged during an exit interview at the end of their treatment from September 2005 until March 2007. Patients were given contact information for breast nurse specialists, and received regular mammographic surveillance, but were only seen at a breast clinic if necessary.

From the 114 questionnaires there were 78 respondents (68%) who completed at least one of the ten questions. 62 of the 78 (79%) received verbal information about PLFU at discharge and of these 61 (98%) felt the information was easily understood. 55 of the 78 received written information regarding PLFU and this was clear in 53 (96%). 60 of 76 (79%) had received their mammography appointment card and of these 57 (95%) found it easy to interpret. 74 of 78 (95%) patients had a clear idea how to contact the breast unit, but only 5 of 78 patients (6%) required a clinic appointment during the study period. All 61 respondents (100%) were either very satisfied or satisfied with process to contact the breast unit. Only 7 of 65 (13%) patients felt that the PLFU service could be improved.

The introduction of a PLFU protocol for low risk breast cancer patients has been well received by the majority of patients. This model is applicable to all UK breast units.

#### **O-24 Total duct excision is still required if breast cancers are not to be missed**

G.F. Heard\*, T. Boyce, R. Skyrme, C.A. Gateley. Royal Gwent Hospital, Newport, Wales, UK

**Introduction:** Nipple discharge is the third most common reason for presentation to a symptomatic breast clinic. Discharge that is clear, serous, serosanguinous or blood-stained is associated with an increased incidence of malignancy. No other methods of investigating nipple discharge have been found to be a suitable substitute for surgery to exclude malignancy.

**Methods:** Details of patients undergoing either microdochectomy or total duct excision between 1995 and 2005 were collected and analysed. An eligible cohort of 194 patients who underwent duct excision for nipple discharge alone was identified.

**Results:** Malignant disease was identified in 11 (5.7%) patients: 4 invasive and 7 in-situ. All but one patient with malignant disease had single duct unilateral discharge. Discharge due to malignant disease was significantly more likely to be bloodstained than that due to benign causes (Fisher's exact test, 2-tailed p-value = 0.00134). Two of three patients with ADH have gone on to develop malignancy and six patients with benign pathology have also developed malignancy; 3 in the ipsilateral breast and 3 in the contralateral breast.

**Conclusion:** Our findings do not support a policy of conservative management. We have found that 10.2% of patients with demonstrably bloodstained nipple discharge had an underlying malignant lesion, despite the absence of other clinical or radiological abnormality. From our data it would appear practical to advocate conservative management for women less than 30 years of age. We conclude that cases of demonstrably blood-stained discharge should undergo duct excision if malignant lesions are not to be missed.

#### **O-25 Are there associations between deprivation and tumour characteristics and treatment factors in the scan breast cancer database?**

C. Ellis\*, S. Wild, U. Chetty, C. Dodd, M. Barber. Western General Hospital, Edinburgh and University of Edinburgh, UK

This study aimed to explore if there were any socioeconomic gradients in tumour characteristics or

treatment factors for breast cancer that could explain the socioeconomic gradients in breast cancer specific survival observed by a number of previous studies. The South East Scottish Cancer Network (SCAN) collects a compulsory dataset on all new breast cancer cases in the South East of Scotland. Four of the five databases which make up SCAN which cover residents of Lothian, Fife and Borders were used in this study. Between 1996 and October 2006 6942 patients were registered. Quintiles of the Scottish Index of Multiple Deprivation (SIMD) Score derived from 2001 census data were assigned to each patient in the database using their postcode. Women for whom no deprivation score could be assigned and all men were excluded leaving 6869 records. Associations between SIMD and the outcome measures were assessed using  $\chi^2$  tests and p values are presented for trends across deprivation quintiles. Logistic regression modelling was used to estimate odds ratios (OR) for the outcome measures after adjusting for potential confounders with data presented for comparisons between the most (Q5) and least (Q1) deprived quintiles. Increasing deprivation was significantly associated with increased risk of having a non-screening referral ( $p=0.044$ ), of having oestrogen receptor negative tumours ( $p=0.001$ ) and grade III tumours ( $p=0.001$ ). Deprived women were no more likely than affluent women to have Stage III/IV disease but did appear less likely to have in situ disease. The only treatment factors associated with deprivation were waiting >28 days from referral to first clinic for women with non-screen detected cancers (OR for Q5 vs. Q1 = 1.41 (95% CI 1.08–1.84), entry into a clinical trial (0.61, 0.50–0.75) and reconstruction surgery among women who had received mastectomy (0.31, 0.16–0.62). There was no association between deprivation and breast surgery type, receiving axillary surgery (patients who received breast surgery only), receiving adjuvant therapies or waiting >28 days from first clinic to starting treatment after adjusting for age, stage and other clinically relevant factors. The findings suggests that differences by deprivation in treatment received do not contribute to socioeconomic gradients in survival but tumour characteristics may be part of the explanation in this population of women with breast cancer.

#### **O-26 A comparative study of pathological prognostic features, treatment and outcomes in women diagnosed with ductal carcinoma in situ of the breast from affluent and deprived areas**

J.T. Jenkins, J. Mansell\*, C.R. Wilson, E.A. Mallon, J.C. Doughty, W.D. George. Western Infirmary, Glasgow, UK

**Introduction:** Few data exist that report the effect of deprivation in relation to DCIS management and pathological variations. We assessed management of ductal carcinoma in situ in affluent and deprived groups and whether differences in clinical and pathological factors were present.

**Methods:** All patients treated for DCIS between 1988 and 2001 were assessed. Outcomes measured were: mode of detection, tumour size, histological grade, surgical procedure, adjuvant therapy and recurrence in relation to deprivation category. Deprivation was categorised using Carstairs and Morris Index. The intermediate group was not assessed.

**Results:** 686 patients were diagnosed with DCIS; 164 (24.7%) lived in affluent areas and 161 (24%) in deprived areas. No difference in mode of detection (screening/symptomatic) between deprivation categories was found (OR 1.35 (95% CI 0.831–2.197);  $p=0.224$ ). No differences in the initial surgical procedure or eventual surgical

treatment existed between groups. Affluent patients were more likely to receive adjuvant radiotherapy (OR=1.94 (95% CI 1.095–3.432);  $p=0.022$ ) but less likely to receive tamoxifen than deprived groups (OR=0.539 (95% CI 0.294–0.986);  $p=0.043$ ). None of the pathological factors assessed showed significant association with socio-economic status. No significant effect of deprivation was noted in terms of disease-free survival after DCIS treatment in all patients after univariate survival analysis (log rank 1.559,  $df=1$ ,  $p=0.212$ ).

**Conclusions:** Socio-economic deprivation had no significant association with clinical or histopathological variables in DCIS patients. No previous studies have attempted to address this issue specifically relating to DCIS. The reasons for differences in adjuvant therapies were not apparent in the study.

#### **O-27 Breast cancer with basal phenotypic expression: mammographic findings**

A.A. Luck\*, A.J. Evans, E.A. Rakha, A.R. Green, C. Paish, I.O. Ellis. Nottingham City Hospital and Addenbrookes Hospital Cambridge, UK

**Aim:** Basal phenotype has been shown to be an independent poor prognostic factor for breast cancer. The aim of this study was to assess differences in the mammographic appearance of screen detected breast carcinoma according to basal phenotype status.

**Methods and Materials:** 1944 consecutive patients with operable invasive breast cancer diagnosed between 1986 and 1998 underwent immunohistochemical analysis to identify those tumours exhibiting basal phenotype characteristics, using CK5/6 and CK14 markers. 356 of these women with known basal or non-basal phenotype breast cancers were common to a prospectively collected database of screen-detected breast cancers, with 350 having a recorded mammographic abnormality. Both the predominant mammographic appearance and any associated features were reported by experienced film-readers who were blinded to the basal phenotype status. Differences in mammographic appearances were assessed between the two groups using Chi-square.

**Results:** 41 (12%) screen-detected cancers showed basal phenotypic expression and these were compared to 309 (88%) non-basal tumours. Basal phenotype tumours were statistically more likely to present as an ill-defined mass (25 of 41 (61%) vs 75 of 309 (24%),  $p \leq 0.001$ ), or comedo calcification (9 of 41 (22%) vs 30 of 309 (10%),  $p=0.019$ ) whereas non-basal phenotype tumours were more likely to present as a spiculate mass (150 of 309 (49%) vs 8 of 41 (20%),  $p \leq 0.001$ ).

**Conclusion:** Screen-detected breast cancers that show basal phenotypic expression differ in their mammographic appearance when compared to non-basal tumours. These findings may explain the prognostic significance of mammographic spiculation and comedo calcification seen in previous studies.

#### **O-28 Audit to set a baseline measurement for clinical breast examination**

R. Owers\*, K. Mullinger, L. Jackson, A.J. Evans, R.D. Macmillan. Nottingham City Hospital, UK

**Aims/Objectives:** To audit the accuracy of Clinical Breast Examination by Breast Nurse practitioners in women complaining of a breast lump. This will then act as a Local Standard for Nurse Practitioners (NP's).

**Method:** Collect data over 2 months new Referral Clinics in all women complaining of a Breast Lump aged over 25 years.

Clinical decisions from examination investigation: Cat A (highly suspicious: if imaging and needle diagnosis neg will need open biopsy). Cat B (Probably benign. Imaging and needling adequate but benign then discharge). Cat C. Doubtful if true lump (if imaging NAD discharge even if needling inadequate).

**Results:** The results for 469 women are presented in the table.

|        | Consultant Breast Surgeon |                          |                     | Nurse Practitioners |                          |              |
|--------|---------------------------|--------------------------|---------------------|---------------------|--------------------------|--------------|
|        | Clinical Decision n       | Final Diagnosis CA n (%) | Normal/Benign n (%) | Clinical Decision n | Final Diagnosis CA n (%) | Normal n (%) |
| CAT A  | 7                         | 5 (71)                   | 2 (29)              | 29                  | 21 (72)                  | 8 (28)       |
| CAT B  | 31                        | 2 (6)                    | 29 (94)             | 121                 | 4 (3)                    | 117 (97)     |
| CAT C  | 23                        | 1 (4)                    | 22 (96)             | 17                  | 1 (6)                    | 16 (94)      |
| Normal | 52                        | 0 (0)                    | 52 (100)            | 135                 | 1 (0.7)                  | 134 (99)     |
| Total  | 113                       |                          |                     | 302                 |                          |              |

**Conclusions:** There is close concordance between the results of consultants and NP's. Neither NP's nor Consultants performed well enough in decisions that lumps were Cat C. Standards have been set: A minimum of 70% of Cat A lumps expected to be cancer. 70% of all Symptomatic Invasive Breast Cancers to be clinically categorised as Cat A lumps, 1% as Cat C.

#### **O-29 Effect of dietary energy restriction on gene expression in normal breast and subcutaneous adipose tissues of overweight women at increased breast cancer risk**

K.R. Ong, A.H. Sims\*, M. Harvie, R.B. Clarke, A. Howell. University of Manchester and Paterson Institute for Cancer Research, Manchester, UK

Pre-menopausal weight gain increases the risk of post-menopausal breast cancer and pre-menopausal weight loss reduces the risk. This study therefore aimed to investigate the effects of dietary energy restriction (DER) on gene expression in normal breast tissue.

Breast and abdominal subcutaneous fat biopsies were performed in 19 healthy but overweight or obese women at moderately increased risk of breast cancer (lifetime risk 1:6 to 1:3). Initial biopsies were taken in the first 7 days of their menstrual cycles. Ten women were randomly allocated to DER (liquid diet, 3656 kJ (864 kcal)/ day) and nine women asked to continue their normal eating patterns. All participants then underwent repeat biopsies in the first 7 days of their next menstrual cycle. RNA was extracted and hybridised to Affymetrix GeneChips.

On average, 7.0 kg were lost and BMI dropped by  $-2.6 \text{ kg/m}^2$  ( $p < 0.0001$  Mann-Whitney) in the DER group compared to in the control group. Levels of insulin, triglycerides, high and low density lipoproteins were lower and sex hormone binding globulin was significantly higher in the DER group. Significance analysis of microarrays was used to identify genes associated with DER. The most highly differentially expressed transcripts in both tissues represented reductions in stearoyl coA desaturase, fatty acid desaturase, and aldolase C. No genes were significantly changed in breast or adipose tissue in women that continued with their normal diet. Other DER-regulated genes in the breast are known to have roles in pro- or anti-neoplastic pathways. DER restriction mimetics or glycolytic enzyme inhibitors may be useful chemoprophylactic agents.