

hypothesis that PET results may directly be influenced by the bio-molecular characteristics of primary BC.

**Methods:** 145 T1N0 BC patients were studied from 06 1999 to 11 2006. FDG-PET was performed no later than 48 hours before surgery. Lymphoscintigraphy was performed within 6 hours before surgery. SN biopsy was followed in all cases by a complete ALND. Pathologic involvement of the SN and the other non-SNs was evaluated on definitive sections and represented the basis of the comparison between PET imaging and SN biopsy.

**Results:** The median age was 54 years (range 24–70). All patients had pT1 BC except 3 pts with pT2 BC. The average histological tumor size was 16 mm (range 1–35 mm). All lymph nodes detected by lymphoscintigraphy were in axilla, and the detection rate was 100%. All patients underwent complete ALND. 62 patients out of 145 had nodal metastases (42.7%) and 29 had one positive axillary node.

PET results showed 45 true positive and 17 false negative, whereas SN biopsy resulted false-negative in 7 cases and true-positive in 55 cases. The negative predictive value of PET and SN biopsy was 80.5% and 92.2% respectively. However, if micrometastasis detected in SN biopsy may explain in part the PET results, the analysis of clinical, pathological and bio-molecular factors on the primary tumor showed two different patients' population inside PET evaluated N+ patients. A subgroup of more aggressive tumors (ER-, GII, Her2+) were mainly in the PET true-positive patients, whereas in PET false-negative patients, LumA, Mib1 low rate BC were statistically significant detected ( $p=0.005$ ). Overall, the Kaplan Meier survival estimates on the entire patients' population showed a significant worse curve in N+PET+ patients respect to all the other after a median 7 years follow-up; N+PET- and N-PET+/- curves were overlapped ( $p=0.017$ ).

**Conclusions:** Intrinsic biologic features of primary tumor are probably determinant of FDG-PET results and on clinical meaning of nodal metastases in term of prognostic value and therapeutic planning. PET false negative cases may identify less aggressive indolent metastasis. Removal of these axillary nodes may be facultative without the risk of understaging the disease.

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Poster

#### Is a Clinicopathological Scoring System Valid in Selecting Patients for Sentinel Lymph Node Biopsy?

A. Sharma<sup>1</sup>, C. Ives<sup>1</sup>, L. Bol<sup>1</sup>, A. van den Broeck<sup>1</sup>, D.J. Ferguson<sup>1</sup>. <sup>1</sup>Royal Devon & Exeter NHS Trust, Breast Surgery, Exeter, United Kingdom

**Background:** Sentinel lymph node biopsy is widely used as an alternative to axillary clearance in early breast cancer. However, selecting those patients most likely to require axillary clearance from initial investigations can be difficult. Carmichael et al. outlined a clinicopathological scoring system to select patients for sentinel node biopsy versus axillary clearance in 2006. This was prospectively assessed favourably by Pinkney et al. in 2007. A retrospective validation series in our unit also supported the implementation of this scoring system. We now present our experience of the prospective use of this scoring system for stratifying patients for sentinel node biopsy versus axillary clearance.

**Materials and Methods:** Carmichael's 10-point scoring system was calculated for all invasive breast cancer patients at the pre-operative multidisciplinary team meeting over an 18 month period between 2007 and 2009. The score was used with clinical information and patient preference to decide on the nature of the axillary surgery undertaken. The lymph node status from either sentinel node or axillary clearance results was then compared with the pre-operative Carmichael score.

**Results:** 190 patients with a mean age of 61 years were assessed using Carmichael's scoring system. The accuracy of the scoring system was 62% with a false positive rate of 25% and a false negative rate of 12%. A low score reflected a 20% node positive rate (21% in validation series) whilst a high score reflected a 45% node positive rate (85% in validation series).

**Conclusions:** Despite the results from our validation series, this test has not shown sufficient accuracy when used prospectively. The scoring system appears to overestimate the need for axillary clearance. Whilst there is a place for a clinicopathological test in a sub-group of patients, the requirement for this is likely to be superseded by intra-operative sentinel node assessment techniques. Until these techniques are broadly implemented, the decision regarding axillary surgery in breast cancer patients remains a clinical judgement in our unit.

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Poster

#### Factors Influencing Requirement for Re-excision in Breast Conservation for Ductal Carcinoma in Situ

E.J. Macaskill<sup>1</sup>, D. McLean<sup>2</sup>, R. Mullen<sup>1</sup>, A. Khalil<sup>1</sup>, C.A. Purdie<sup>3</sup>, D.C. Brown<sup>1</sup>. <sup>1</sup>Ninewells Hospital & Medical School, Breast Surgery, Dundee, United Kingdom; <sup>2</sup>Ninewells Hospital & Medical School, Breast Imaging, Dundee, United Kingdom; <sup>3</sup>Ninewells Hospital & Medical School, Pathology, Dundee, United Kingdom

**Background:** Previous results from the UK National Breast Cancer Screening Programme have highlighted that there were a higher proportion of women with ductal carcinoma in situ (DCIS) only undergoing more than one procedure for complete excision in our region than in other regions in Scotland. While an internal review of those individual cases was performed for audit purposes, we sought to determine any causative or predictive factors to improve the numbers of patients with DCIS completing treatment with one operation.

**Methods:** All patients undergoing breast conserving surgery for DCIS from February 2010 for a twelve month period were identified from the local cancer audit database. Patients undergoing mastectomy as first operation for DCIS, and patients with microinvasive or invasive disease were not included.

**Results:** In the twelve month period from Feb 2010, forty-three patients were diagnosed with DCIS. Of 35 patients that had breast conserving surgery for DCIS, 26 required only one operation, 8 required two procedures and one required three procedures. There was no difference in age or mode of presentation between those that required one or more operations for disease control. Tumour size on final pathology was significantly greater in those that had more than one operation ( $p=0.03$ ). In those who had one operation, in no case was the disease extent underestimated on mammography by greater than 10 mm, and in 5 cases the disease was overestimated by >10 mm. In those that had more than one operation, the disease was underestimated in 3 cases (>10 mm) and not overestimated in any case ( $p=0.01$ ). Initial excision specimens from those that required more than one procedure were of similar mean weight as those with more than one procedure, but had a significantly greater volume ( $\text{mm}^3$ ;  $p<0.0001$ ), despite overall pathological size after all treatment being larger in this group. In 88% of those undergoing one operation DCIS was diagnosed on core biopsy (B5a), whereas only 55% of those who required more than one procedure were B5a on core biopsy ( $p=NS$ ). Grade of DCIS (low, intermediate or high) was not a factor in determining need for re-excision.

**Conclusion:** Factors influencing complete excision of DCIS with a single procedure were smaller tumour size, underestimation of extent of disease on mammography (by >10 mm), larger volume excision at first procedure, and core biopsy not showing DCIS pre-operatively.

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#### Sentinel Lymph Node Micrometastases. How to Act?

M.C. Sanz<sup>1</sup>, C. Cruz<sup>1</sup>, P. Manosalvas<sup>1</sup>, S. Aragón<sup>1</sup>, M.L. Arroyo<sup>1</sup>, M. Gallego<sup>1</sup>, M. Blanco<sup>1</sup>, B. Sancho<sup>1</sup>, J.M. Hernández<sup>1</sup>. <sup>1</sup>Hospital Universitario Doce de Octubre, Ginecología y Obstetricia, Madrid, Spain

**Background:** Complete axillary node dissection (ALND) is the standard surgical treatment for women with sentinel lymph node (SLN) micrometastases of breast cancer. In recent years, some studies have compared SLN and ALND, and even if more data is necessary, it appears that SLN alone do not result in inferior survival. However, patients with ALND are more likely to suffer from morbidities such as paresthesias, shoulder pain and lymphedema.

We analyze the rate of axillary micrometastases found in our patients as well as the clinical and histopathological features and current status of these women.

**Materials and Methods:** Retrospective observational study including 26 patients with breast cancer and nodal micrometastases diagnosed in the period 2007–2010 in our multidisciplinary unit.

**Results:** From January 2007 to November 2011 we have obtained a positive result for micrometastases in 26 patients. We used hematoxylin eosin staining intraoperatively between 2007 and 2009. From 2010 we are using the OSNA method (detection of CK19 copy number), making the 65.38% of this determinations by this technique. Average age of these patients: 60.99 years. Average tumor size after surgery: 20 mm. We found infiltrating ductal carcinoma in 22 patients (84%) and infiltrating lobular carcinoma in four of them (7.69%). 22 women had hormone-sensible carcinomas. 13 of them luminal A and 9 of them Luminal B. 4 tumors overexpress erb-2. There was no triple-negative phenotype. 61% of the tumors were grade II tumors, 27% of them were grade III tumors and 3.8% of them were grade I tumors.