The higher rates of LR in the EPG & GPG were brought about by the majority receiving neither RT not Tamoxifen in these groups. In all NPI groups survival was worse in those suffering LR.

The risk of death after LR in every prognostic group and the relative risk being higher in the best NPI groups give strong evidence that it is the occurrence of LR rather than poor prognostic features coding for both death and LR.

Local control is as important as the application of systemic therapies in improving survival.

O-103. Clinical value of CEA, CA 15-3 and TPS in breast cancer

Lee YH, Jung JH, Hwang GH, Park HY. *Kyungpook National University Hospital, Taegu, Republic of Korea*

The purpose of our study was to compare carcinoembrogenic antigen (CEA), the mucin associated tumor antigen (CA15-3), and the tissue polypetide antigen (TPS) in primary breast cancer and gauge the correlation of the prognostic factors. In 321 patients with breast cancer, the level of the serum tumor markers, CEA, CA15-3, and TPS were determined preoperatively and during follow-up. The sensitivity and specificity of tumor markers in patients with breast cancer were CEA 44.6%. 94%; CA15-3 51.8%, 99%; and TPS 66.07%. 94%. CA15-3 and TPS increased with tumor size, the number of involved lymph nodes and progression of grade. CEA, CA15-3 and TPS were not related to estrogen or progesterone receptor status. Tumor markers in cases of organ or multiple metastasis were higher than in cases of local recurrence. Increasing levels of tumor markers were independent of the site of metastasis, where elevated levels of CA15-3 were primarily related to visceral metastasis. The preoperative serum concentration for CA15-3 and TPS appears to have a significant relation to the outcome in patients with early-stage breast cancer and may have a potential role in the rational selection of high risk patients for whom additional treatment and careful follow-up studies should be undertaken. Postoperative serial measurement of plasma CEA, CA15-3, and TPS is a cost-effective method to detect recurrent breast cancer and the association of these tumor markers may provide tumor profiles with a predictive value superior to a single parameter.

O-104. Should computerised tomography (CT) replace abdominal ultrasonography and chest radiography (USG + CXR) as initial staging investigation for visceral disease in patients with metastatic breast cancer (MBC)?

Grant VB, Owers R, Evans AJ, Cheung KL. *Nottingham City Hospital*

CT has been replacing USG+CXR for initial staging and monitoring therapy for MBC. It is costly and may lead to unnecessary radiation exposure. This has prompted investigation into whether a subgroup can be identified where initial USG+CXR may be more appropriate.

A retrospective audit was carried out on all newly diagnosed MBC patients within a 12-month period prior to using CT for initial staging. An index of high suspicion for visceral metastases was defined as having one of the followings: deranged liver function, abdominal or chest symptoms.

Of 119 patients, 64 underwent USG+CXR initially. Further imaging with CT was considered necessary (1) as extrahepatic metastases were identified on USG+CXR ($N = 12$), or (2) for monitoring therapy ($N = 6$). For these 18 patients, CT could have replaced initial USG+CXR. Of the remaining 46 patients who underwent USG+CXR without CT, 21 were found to have visceral metastases and a further 7 had a normal scan but a high index of suspicion. Excluding 6* who were too frail for active treatment, it would have been appropriate for 22 to have further imaging with CT. 18* patients had normal USG+CXR and low index of suspicion and would not therefore require CT. At least 24 (*6 + 18) (37.5%) could have been staged appropriately with USG+CXR.

In patients who have a low index of suspicion of visceral metastases and/or who are considered inappropriate for active treatment, initial USG+CXR appear to be most suitable with further CT imaging if indicated. The selection criteria with the mentioned index of suspicion will be validated in an ongoing audit on using CT for initial staging.

O-105. Bioinformatic analysis using TMAS in breast cancer: age-related heterogeneity within grade 3, node negative disease

Thomas GA, Lewis PD, Riley S, Bartlett JM, Leonard RCF. *Cancer Institute, Swansea & University of Glasgow*

In planning chemotherapy or hormonal therapy for breast cancer, increasing attention is being paid to the use of biomarkers that may predict for treatment response. ER, PgR and Her2 are still the only established predictors. However, regardless of age, there is increasing pressure to tailor therapy according to risk and predicted benefit. It is assumed that the biology of breast cancer is similar irrespective of the age of the patient. The aim of this study was to evaluate the heterogeneity of biomarker expression in two distinct pre and postmenopausal age groups. Representative paraffin blocks were selected on forty-two Grade 3, node negative, ductal carcinoma patients (pts) from the histological archive of Singleton Hospital. 21 pts were under 43 (young) and 21 over 70 (old) at the time of operation. Cores were taken from 3 representative areas of invasive tumour to make a single tissue microarray (TMA). Immunocytochemistry was performed for the following markers: ER, PgR, ki67, mcm-2 and Her2. ER and PgR were scored using the Allred system, the proportion of positive nuclei was scored in each core for ki67 and mcm-2. The standard Her2 scoring system was used. Bioinformatic and statistical analysis revealed clear differences between the two groups. Whereas ER status and ki67 positivity rates showed no significant differences ($p = 0.786$; Mann Whitney test), the young group showed a much higher frequency of Her2 positive cases (6/21 positive young, none in the old group) and a much higher proportion of mcm-2 positive nuclei, particularly in the ER negative subgroup ($p = 0.0323$; Mann Whitney test). Agglomerative hierarchical cluster analysis and principal components analysis is being applied to examine more complex interactions between markers.

This analysis suggests important variance within pathologically homogeneous disease. Studies on the biomarker profiles of breast cancer in "young" and "old" breast cancer pts may help in future randomised clinical trial design for early disease.

O-106. Prognostic value of phosphorylated mitogen-activated protein kinase (aMAPK) in primary breast cancer

Rampaul RS, Nicholson RI, Gee JMW, Pinder SE, Blamey RW, Robertson JFR, Ellis IO. *Nottingham City Hospital*

Phosphorylated Mitogen-activated Protein Kinase (aMAPK), has been shown to be associated with poor response to anti-hormonal therapy and in such patient cohorts is also associated with decreased patient survival. Few studies have examined aMAPK in primary breast cancer (PBC), wherein a shortened Disease Free Survival (DFS) but not Overall Survival (OS) was described. These studies are few in number, small in size and possess several confounding factors such as the use of adjuvant therapy. Using tissue micro array (TMA) technology, 917 cases were constructed into a TMA. All patients were 70 years or younger at diagnosis, treated surgically with mastectomy or breast conserving surgery, axillary node sampling+/_radiotherapy between 1980 and 1986. No adjuvant systemic therapy was given. Immunohistochemistry was employed to detect aMAPK levels, semi-quantitative scoring methods were used to classify as positive or negative. Correlations were then sought for local recurrence (LR), regional recurrence (RR) and Distant Metastasis (DM).

Of 917 cases, 80.7% ($n = 733$) were positive for over-expression of aMAPK. Significant associations with grade ($p = 0.020$), oestrogen receptor (ER) ($p = 0.001$) and tumour type ($p = 0.001$). However, VI, size, stage arid NPI were non-significant. No associations with OS or DFS was seen.

In multivariate analysis only size, grade, stage and ER were or independent significance.

aMAPK expression is of limited prognostic value compared to standard histopathologic factors (and NPI). However, due to its close relationship to ER expression, may be a candidate for prediction of response to anti-hormonal therapies.

O-107. Therapeutic mammaplasty – audit of outcome

Macmillan RD, Owers R, Morgan DAL, McCulley SJ. *Nottingham City Hospital*

Therapeutic mammoplasty (Th Mammo) is an oncoplastic technique for extending indications for and improving the cosmetic outcome of breast-conserving surgery. It combines bilateral breast reduction techniques with a unilateral wide local excision of breast cancer and is most suitable for women with relatively large and/or ptotic breasts.

The aim of this study was to analyse cosmetic and psychosocial outcome in women who have undergone Th Mammo.

68 women who had Th Mammo with post-operative radiotherapy were identified. The alternative surgical option for most women in this series was mastectomy +/− reconstruction.

Each was invited to be interviewed by a research nurse (R.O.). A questionnaire was completed, which included the Hopwood Body image scale (HIS). Standardised photographs were taken.

This abstract refers to the initial 26 women reviewed. The mean BIS was 3.61 (median = 2, range 0–22). The mean % breast retraction assessment (BRA) was 6.8% (median 6.3%, range 1.1–15.7%). 77% were judged to have an excellent/good result, 15% fair and 8% poor by a medical panel. 1 patient regretted her choice of operation. 65% of women thought that the appearance of their breasts was at least as good after surgery as it was before. These (initial) results show that Th Mammo is a successful operation for treating suitable women with breast cancer in a high percentage of cases. Body image and patient satisfaction is generally high – comparing very favourably with previously published data on women having wide local excision alone or mastectomy. Good symmetry after a 1-stop operation can be achieved in the large majority of cases despite radiotherapy.

O-108. An audit of outcome of women having immediate post mastectomy latissimus dorsi myocutaneous flap breast reconstruction (IPMLDBR)

Kokan J, Gawad A, Galea M. *Great Western Hospital, Swindon*

Aim: To audit patient satisfaction (with time) after IPMLDBR.

Method: Patient questionnaire to 110 consecutive alive women. This series audits a single surgeon practise in a DGH setting.

Results: Response rate 73% (80/110); Mean time since surgery 3.5 years. Median satisfaction score 8 (scale of 1–10: unsatisfied–satisfied), and 94% (75/80) would recommend reconstruction to others. In deciding about IPMLDBR women wanted to feel normal, 88% and wished to avoid wearing a prosthesis, 53%. 93% felt the preoperative decision was nearly or wholly their own; the media were the least and the surgeon the most influencing external factors. 81% advised that they had received enough pre-operative information; 38% requested more about alternative surgical options and only 24% had the opportunity to experience the buddy system.

Out of hospital recovery: 75% driving, 68% gardening, 38% playing sport, 32% back at work by 6 weeks. Shape with a bra: good/excellent 93%. Shape without a bra/match with contra-lateral breast: good/excellent 59%. Aesthetically breast consistency, 68% firmer/hard and mobility, 59% less mobile are the most difficult for the surgeon to mimic. Self confidence reduces with fewer clothing; 85% similar pre and post op with day clothes, 69% for night wear and underwear, 22% naked. 67% of women self-reported one or more complication; 33% seroma, 26% significant bruising, 21% some degree of infection requiring antibiotics.

Conclusions: This data provides useful baseline data. Improvement in preoperative information, counselling with clear understanding of expectations and reduction in post-operative complications should help to improve satisfaction further.