in cancers prior to 1988. However survival within each NPI group has improved, due to better therapy. Recalculation is based on new figures and the prediction is compared with the observed outcome:

| Invasive cancer | Diagnosed (n) | | Predicted survival at 6 years (n) | | Observed survival (median FU 6 years) (n) | |
|---|---|---|---|---|---|---|
| | C | T | C | T | C | T |
| GPG | 92 | 113 | 89 | 110 | 91 | 111 |
| MPG | 87 | 96 | 71 | 79 | 69 | 85 |
| PPG | 22 | 20 | 11 | 10 | 14 | 11 |
| Total | 2010 | 229 | 171 (86%) NS | 199 (87%) | 174 (87%) Relative fatality 0.77 (0.45–1.35) | 207 (90%) |

There is good agreement between the predicted and observed 6 year survivals, neither show significant difference between C and T groups. Although in the Trial group there were more cases in the GPG and less in the PPG, this was not large enough to significantly improve survival and the absolute difference is 3% less deaths in the trial group at 6 years.

**Conclusion:** There is no significant advantage to annual screening over the standard 3 yearly NHS screening and shortening of the screening interval would certainly not be cost effective.

**109** ORAL

**Final results of Russia/WHO prospective randomized trial of breast self-examination (1985–2003)**

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This study was conducted to determine whether an intensive program of breast self-examination (BSE) instruction will reduce the number of women dying from breast cancer.

**Methods:** Between 1985 and 1989, 96,292 (from 198,126) women (ages 40–64 y) in 14 randomly selected polyclinics in St. Petersburg and in 50 industrial polyclinics in Moscow were taught BSE (randomisation by the WHO, Geneva, Switzerland). 101,834 women in 64 other randomly selected polyclinics were controls. Physicians provided weekly breast clinics in all 128 polyclinics. Women were able to seek consultation either by self-referral or on the advice of their physician. For both BSE and control groups, all identified abnormalities were biopsied and treated at the oncological institutes.

**Results:** BSE compliance was 76.4% at the end of the eighth year of the study. More women in the BSE group came to the breast clinic for suspected pathology (7061) than in the control group (3825; p0.05). More benign breast lesions were diagnosed in the BSE group (1032) than in control group (547; P<0.05). The number of cancers diagnosed was similar in the BSE and the control groups (733 and 702 respectively, P=0.09). Kaplan-Meier 15-year survival from the time of diagnosis of breast cancer was 53.8% for the BSE group and 51.1% for control (P>0.5). There were 338 (0.35%) breast cancer death in the BSE group and 343 (0.33%) in the control group (N.S.).

**Conclusion:** Intensive teaching in BSE did not reduce mortality from breast cancer.

**110** ORAL

**Additional breast lesions in patients with breast cancer at MR imaging: impact on clinical management**

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**Purpose:** 1. To inventory the additional workup for lesions detected at MR imaging in patients eligible for breast-conserving therapy (BCT) on the basis of conventional imaging and palpation, and to inventory the impact of this workup on clinical management. 2. To evaluate the performance of clinical reading to exclude malignancy with high confidence without additional workup.

**Material and Methods:** 116 patients with 118 proven breast cancers underwent MRI of both breasts prior to BCT. Additional lesions were enhancing lesions other than the proven cancer. The frequency of occurrence of additional lesions, the additional workup that was required, and the number of patients in which treatment was changed due to more extensive disease detected by MRI were established. The performance of clinical reading, and the performance of the combination of clinical reading and computerized analysis were obtained in the task of excluding malignancy at high confidence.

**Results:** MRI showed a larger extent of the index lesion in 10% of the patients (n=12). Furthermore, 50 additional lesions in 40 patients (35%) were detected. Twenty lesions were proven to be malignant, 30 were benign (7 pathology-proven, and 23 by follow up). Additional conventional workup (MRI-directed ultrasound-guided fine-needle aspiration or core biopsy) before surgery was performed in 78% of the additional lesions (39/50). In almost half of the cases (49%), the lesion was visible at workup and diagnosed by pathology. Treatment was changed to a more extensive approach in 22% (n=25). The specificity of clinical reading of additional lesions was 30% at 100% sensitivity (mean follow up 21 months). The combination of clinical reading with computerized analysis yielded higher specificity (96.6%) without loss of sensitivity.

**Conclusion:** In approximately half of the additional lesions conventional work up is useful to obtain the diagnosis. Clinical reading yields a low performance in identifying benign additional lesions. A significantly better performance is achieved by combining clinical reading with computerized analysis.

**111** ORAL

**Stereotactic directional vacuum-assisted breast biopsy in 480 patients with microcalcifications: radiological and pathological correlation**

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**Background:** Radiological criteria exist to assess microcalcifications (MCs) on mammograms. On the basis of the level of suspicion, lesions can be categorized according to the Breast Imaging Reporting and Data System (BI-RADS). We compared radiological analysis and histopathological findings of microcalcifications on mammography.

**Material and methods:** 480 consecutive MCs were analyzed and biopsied. Neither a palpable tumor nor a visible mass in mammograms or ultrasound was associated with the area of MC. Before biopsy, MCs were classified on mammograms by two experienced radiologists as probably benign (BI-RADS III), indeterminate (BI-RADS IVa), suspicious (BI-RADS IVb) or malignant (BI-RADS V) using the following criteria: MC morphology as punctate, pleomorphic, and branching, respectively; microcalcification distribution as diffuse, clustered, linear, or segmental, respectively. In addition, progression was assessed with earlier mammograms. Stereotactic biopsies were performed on a prone dedicated table with an 11-gauge vacuum assisted Mammotome®-biopsy device. Histopathological and radiological diagnoses were compared.

**Results:** Histopathology of MC bearing tissue revealed 321 (67%) benign lesions [adenosis and other fibrocystic changes 207, fibroadenoma 67, fat necrosis and scar 22, and other benign lesions 25). 159 (33%) were malignant lesions (ductal carcinoma in situ (DCIS) 110, DCIS and invasive cancer 23, "minimal intraductal neoplasia" (differential diagnosis atypical ductal hyperplasia versus non-high grade DCIS) 24, and CLIS 2]. Of the 480 lesions, 77 were classified radiologically as probably benign (BI-RADS III), 198 as indeterminate (BI-RADS IVa), 76 as suspicious (BI-RADS IVb), and 2 as malignant (BI-RADS V). Benign lesions were classified accurately as BI-RADS III lesions in 19%, and as suspicious lesions in 34%. Malignant lesions were classified as suspicious or malignant lesions in 61%.

**Conclusions:** There is considerable overlap in the mammographic appearances of benign and malignant MC lesions. Stereotactic vacuum assisted biopsies proved to be a safe and accurate method to assess MCs. We suggest that MCs should be biopsied preoperatively.

**112** POSTER HIGHLIGHT

**The effect of screening on mortality**

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**Invasive cancers:** Prognosis has greatly improved in recent year. The effect of screening has been difficult to calculate because of coincidental therapeutic improvements. Use of the Nottingham Prognostic Index (NPI) allows such analysis: earlier detection increases percentages in the better groups, whereas therapies improve prognosis within prognostic groups. The overall effect in the screening age group (50–64) on the whole tumour set (screen detected and symptomatic) at NCH is calculated.

**DCIS:** 25% of screen detected cases are DCIS (an excess of 20%), 70% of these are high grade. Taking the best estimates of the rate of development of invasive tumours from DCIS and their grades, the number of invasive tumours averted by treating the excess DCIS is calculated. The