£33,381 in 95% of the PSA replicates. The cost effectiveness was improved in patients 70 years and older at entry and in patients with low BMD.

Conclusions: This analysis suggests that treatment with ZOL is cost-effective for the prevention of bone-loss and fractures in PMW with early BCa receiving AI therapy in the UK.

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Nationwide Korean breast cancer data of 2006 using breast cancer registration program

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Background: Since 1996, Korean Breast Cancer Society has analyzed and reported the nationwide breast cancer data biennially. The purpose of the present study was to evaluate the chronological changes and characteristics of Korean breast cancer. From 2001, on-line Korean Breast Cancer Registration Program was started and we can now obtain and analyze the data more easily.

Materials and Methods: Data were collected from 39 medical schools (69 hospitals), 23 general hospitals and 5 private clinics. Essential data (patient number, age, sex) were collected via questionnaire and other detailed data were collected through the on-line Korean Breast Cancer Registration Program.

Results: In 2006, 11,275 cases of breast cancer were newly diagnosed. The crude incidence rate of breast cancer of 2006 was 46.8 among 100,000 women and median age was 48.0 years. The age distribution of breast cancer peaked in the fifth decade (40.0%); followed by the sixth (25.7%), fourth (14.3%) and seventh (13.0%) decades. The proportion of early breast cancer (stage 0, I) was 47.5% and breast conserving surgery was performed in 48.8% of the patients. Compared with the results of previous survay, characteristics of Korean breast cancer in 2006 were (1) an increase in the number of patients and the incidence rate, (2) high proportion of young age premenopausal patients, (3) increase in the proportion of breast conserving surgery, (4) increase in the rate of early cancer (stage 0, I), (5) increase in the rate of patients whose breast cancer was detected on screening, (6) increase in patients with some risk factors.

Conclusions: Present study suggest the incidence of Korean breast cancer will continue to rise. Several characteristics of Korean breast cancer patients seem to follow the patterns of western countries, but differences are also present. We, all the members of Korean Breast Cancer Society, believe that it was very important and meaningful to understand the characteristics of Korean breast cancer through continuous nationwide data collection and analysis as the present study in the future.

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Physical activity and the risk of breast cancer in BRCA1/2 families in the Netherlands

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It has been consistently shown that physical activity reduces the risk of breast cancer in the general population by approximately 20−40%. However, it remains unclear whether and how physical activity affects breast cancer risk in BRCA1/2 breast cancer families. Since physical activity is a modifiable risk factor, it is important to obtain insight in its possible influence on the risk of breast cancer in this high-risk population.

In this retrospective nationwide cohort study, a self-administered questionnaire on known and suspected breast cancer risk factors was completed in by 3715 eligible female family members in 485 BRCA1/2 families between 1998 and 2007. In order to reduce potential survival bias, information on deceased persons was collected through a close relative. 918 women were typed as BRCA1/2 mutation carrier and 142 were identified as obligate carrier. Information on breast and ovarian cancer and on preventive surgical measures was verified with the PALGA database (Pathological Anatomy National Automated Archive) until August 2007.

Information on physical activity will be derived from questions on walking, cycling, household activities, longest held occupation and sport activity (before and after age 20). Duration (average amount of hours spent weekly) and intensity (ratio of work metabolic rate to resting metabolic rate (METs)) will be considered separately and combined. We will also analyse a total physical activity score in which the different categories of physical activity will be combined. The multivariate hazard ratio as estimate of relative risk and 95% confidence intervals will be obtained using the Cox Proportional Hazards Model stratified for gene and birth cohort with subjects' censoring-age as time scale. Possible effect modification by family history of breast cancer and BMI will be investigated. Results will be presented.

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Triple negative breast cancers – clinicopathological differences in an Asian population

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Background: Triple negative breast cancers (TNBC) account for 15% of breast cancers and more frequently affect premenopausal African and Afro-American women. There is a paucity of data from Asian countries. We aim to review our data to compare clinicopathological characteristics in our local population.

Methods: 326 consecutive patients treated for breast cancer from May 2006 to December 2007 were analyzed. Data on clinical and histopatho-logic characteristics were retrieved from a prospectively collected database. TNBC patients were defined by negativity of estrogen, progesterone and HER2neu receptors. Chi square analysis was used to evaluate independent prognostic factors.

Results: In the study cohort, the median age was 56 years (range 27−90). 284 (88%) were invasive ductal carcinoma, 18 (6%) were invasive lobular carcinoma, 14 (4%) were mucinous and 8 (3%) were others (cribiform, tubular etc). 236 (73%) were estrogen receptor positive, 144 (45%) were progesterone receptor positive and 52 (16%) were Her2neu positive.

The incidence of TNBC is 13%. The majority were between the age groups 51 to 60 years (35%) >60 years old (37%). 69.8% (n = 30) were Chinese and 30% (n = 13) of the patients were premenopausal. Tumour size was $\leqslant$1 cm in 3% (n = 1), 1.1−2 cm in 33% (n = 13), 2–5 cm in 49% (n = 19) and >5 cm in 15% (n = 6). Lymphovascular invasion was seen in 10 (29%) patients. 30% (n = 13) presented with AJCC stage 1 disease, 35% (n = 15) with stage 2 disease; 26% (n = 11) with stage 3 disease and 9% (N = 4) with stage 4 disease. The majority were grade 3 tumors (79%).

The non-TNBC group comprised 283 patients (86%). The majority were between 41−50 years (29%) and 51–60 years (31%). 77% (n = 217) were Chinese and 38% (n = 106) were pre-menopausal. 5% (n = 13) had tumors $\leqslant$1 cm, 34% (n = 83) were 1.1−2 cm, 46% (n = 114) were 2−5 cm and 15% (n = 38) were >5 cm. Lymphovascular invasion was seen in 33% (n = 75). 31% (n = 88) presented with stage 1 disease; 35% (n = 107) were stage 2, 19% (n = 55) were stage 3 and 12% (n = 33) were stage 4. The majority were grade 1 or 2 tumors (69%). Lymph nodes were positive in 128 (47%).

Prognostic variables evaluated suggest that TNBC occur more commonly in postmenopausal women ($p = 0.05$) and are high grade ($p < 0.005$). There were no differences for age, ethnicity, tumour size, lymphovascular invasion, staging and nodal involvement.

Conclusion: The incidence of TNBC in our population is similar to Western literature. TNBC are more likely to be high grade tumors. Unlike other studies, TNBC seem commoner in post-menopausal women in our country.

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Breast cancer treatment and outcome in women $\geqslant$50 years old with high familial risk

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Background: Data on impact of family history on presentation, management and outcome of breast cancer are conflicting. In this population based study we compared breast cancer characteristics, treatments and survival among patients 50 years or older with and without a positive family history of breast cancer.

Methods: At the population-based Geneva familial breast cancer registry, we identified all women $\geqslant$50 years diagnosed with primary invasive breast cancer between 1990–2004. Family history was considered as high if $\geqslant$1 first-degree relative had early onset breast cancer, or if 2 or more second-degree relatives had breast/ovarian cancer. We excluded from the analysis patients with moderate or unknown family history.We compared tumor characteristics and treatment between patients with high vs. no family history by means of logistic regression analysis. We used Kaplan–Meier analysis to calculate breast cancer specific survival rates. With Cox proportional hazard analysis we identified factors significantly associated with breast cancer mortality risk adjusting for confounders.

Results: Among 3323 women, 179 (5.4%) were classified at high familial risk and 2168 (65.2%) with no familial risk. Compared with women with no familial risk, women at high familial risk were younger and more likely to be diagnosed in recent years. They received less often sub-optimal locoregional treatments (adjusted Odds Ratio 0.6, 95% Confidence Intervals [CI]: 03−1.0). There were no significant differences in tumor characteristics and in use of systemic therapy between the two groups. Five-year breast cancer specific survival was 86% and 85% respectively for women at high and no familial risk. In the multiadjusted Cox analysis, breast cancer mortality risk was significantly associated to age, stage, grade, estrogen receptor status, locoregional therapy, but not family history (Hazard Ratio for high familial risk 0.6, 95% CI: 0.2−1.3).

Discussion: In postmenopausal women a strong family history is associated with better use of standard treatment but is not linked to tumor characteristics or prognosis.

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Male breast cancer – a ten year overview

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Background: Male breast cancer is a rare disease accounting for less than 1% of all breast cancers with an annual prevalence in Europe of 1 in 100,000 and mainly affects men over the age of 70. Multiple risk factors have been reported including genetic factors, lifestyle (obesity, alcohol and oestrogen intake), occupation and other diseases (testicular and liver damage).

The aim of this study was to identify the incidence of breast cancer in men referred to our unit with a breast lump over a ten year period.

Methods: All patients referred to clinic with a breast lump between 1/8/1997 and 31/7/2007 were included in the study. Histology results were reviewed and patients with a diagnosis of malignancy were identified. Patient demographics, diagnostic methods used (Fine needle aspiration cytology (FNAC) or Core biopsy (CB)) and final histology was recorded. Data was analysed using Microsoft Access 2000.

Results: During the ten year study period a total of 519 men were referred to our clinic with a breast lump. Of these patients 29 patients (6%) were found to have a malignancy with a median age of 72 (range 27−92). Diagnosis was initially made by FNAC, CB or both in 23 of the cases. Histological type included invasive ductal carcinoma (23), non Hodgkins lymphoma (1), intracystic papillary carcinoma (1), anaplastic small cell carcinoma (1), leiomyoma (1) and invasive mucinous carcinoma (1). There was also one case of ductal carcinoma in-situ (DCIS) in a 27 year old man who underwent unilateral surgery for what was thought to benign gynaecomastia with no prior tissue diagnosis.

In addition one case of atypical ductal hyperplasia was found in a 24 year old male following bilateral gynaecomastia surgery with no prior tissue diagnosis.

All patients were treated in accordance with current practice guidelines.

Conclusion: Male breast cancer remains a rare disease and accounts for a small number of referrals to breast clinics. In our series only 6% of all men referred for assessment were found to have a malignancy. One issue that remains unclear from this study is whether there has been a change the aetiology of male breast cancer and age incidence. Should we consider CB for all male breast lumps with no suspicious features? which is outside the scope of this study.

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Timing and severity of prominent side effects of anastrozole and tamoxifen

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Background: Side effect profiles of tamoxifen in the prevention/adjuvant setting and anastrozole in the adjuvant setting are well known. However, little data is available on severity and specifically on timing of these events. It is believed that the more participants of clinical trials know about occurrence and severity of side effects, the fewer and milder of these will the participant experience.

Methods: Women participating in the International Breast cancer Intervention Study (IBIS-I) and Arimidex, Tamoxifen Alone or in Combination Study (ATAC) gave detailed information of specific side effects at each 6 monthly follow-up visit. Side effects were defined as mild, moderate, or severe. Prominent side effects of tamoxifen and anastrozole have been analysed according to severity and the occurrence of these events. Here, we will present new data specifically on timing and severity of side effects reported during the active treatment periods of the IBIS-I and ATAC studies.

Results: For both studies, results are presented for the active treatment period. In the IBIS-I study, highest rates for all severities were seen for hot flushes in both treatment arms, followed by headaches and nausea/vomiting. Gynaecological side effects were mostly of mild severities, with only slightly higher rates of moderate severities in the tamoxifen group compared to the placebo group. Overall, the majority of side effects were of mild severity in both treatment arms. In the ATAC study, a very similar picture was seen where most side effects reported were of mild severity. Highest rates were found for mild and moderate hot flushes in both treatment arms. The rate of severe hot flushes was much smaller but somewhat more related to tamoxifen usage. Other pre-defined side effects were mostly of mild severity and not reported as often as hot flushes. The timing of side effects was very similar in both studies with the majority of events being reported at the beginning of both studies (0−24 months). Detailed timing patterns of side effects and differences between side effects will be available for presentation.

Conclusion: The majority of side effects reported during IBIS-I and ATAC were of mild severity and occurred early during the treatment period. These results add new information to tamoxifen's and anastrozole's drug profile and are important to incorporate when counseling women to maximise compliance to endocrine treatment.

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Young breast cancer patients with small localised disease: the impact of choice of treatment on survival

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Background: Discussion is still ongoing on the value of breast conserving surgery (BCS) in the treatment of young breast cancer patients. In several studies BCS has been associated with increased risk of local recurrence among young women, still there is insufficient evidence that this impairs long term survival. The aim of our study was to determine the effect of type of surgery on survival of young women (<40 year) with small localised breast cancer in a population-based setting.

Materials and Methods: Women diagnosed with breast cancer before age 40, with tumour size $\leqslant 2$ cm, without clinically positive lymph nodes, between January 1989 and January 2003, were selected from 3 population based cancer registries in the Netherlands, covering 6.3 million inhabitants. Logistic regression analysis was used to study the choice of treatment. Cox regression survival analysis was used to study the effects of surgical treatment, tumour size, lymph node metastases, age, period of diagnosis, radiotherapy and adjuvant systemic therapy on survival and was performed for lymph node negative and positive patients separately. Variables with $p < 0.1$ were entered in the multivariate analysis.

Results: A total of 1266 patients were included in the study (36% <35 years and 64% 35−39 years of age). In total 63% underwent BCS. In univariate analysis presence of lymph node metastases ($p < 0.001$) and younger age ($p = 0.091$) were associated with radical mastectomy (RM). In multivariate regression presence of lymph node metastases was associated with RM (OR 1.64, $p < 0.001$). Median follow-up was 8.6 years and 266 patients died during follow-up. Overall 5-year and 10-year survival was 88% and 79%, respectively. Patients treated with BCS had a 89% 5-year survival compared to 86% for patients treated with RM. For 10-year survival this was 80% and 76%, respectively. In node negative patients no variables were associated with survival. In node positive patients, survival was worse for patients treated with BCS without RT (HR = 2.79, $p < 0.001$) and patients treated with RM (HR = 1.6, $p = 0.026$), compared to patients treated with BCS with RT. Also, patients diagnosed before 1996 (HR = 1.67, $p = 0.003$) and patients not receiving adjuvant systemic therapy (HR = 2.18, $p = 0.002$) had worse survival.

Conclusions: Patients with positive lymph nodes were more often treated with RM compared to node negative patients. In node positive patients, treatment with BCS with RT had the best survival rate.

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Hormone receptor status in breast tumours – An analysis of 11,273 cases

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Background: Breast cancer patients with tumors that are estrogen receptor (ER)-positive and/or progesteron receptor (PR)-positive have lower risk of mortality after their diagnosis compared to women with ER-