

Results: Percentage mammographic density (PD) was positively associated with tumor size ($p=0.004$) and grade ($p=0.033$), but the relationship with grade was attenuated after adjustment for, among other variables, mode of detection ($p=0.069$). Furthermore, PD was associated with both breast and locoregional recurrence even after adjustment for treatment; women with $PD \geq 25\%$ had a hazards ratio (HR) of 1.96 for breast recurrence and a HR of 1.78 for locoregional recurrence compared to women with $PD < 25\%$ ($p=0.032$ and $p=0.017$, respectively). No other associations between PD and the tumor characteristics studied (hormone receptor status, lymph node metastasis, proliferation rate, and histopathological classification) were observed, nor was PD associated with distant metastasis and survival.

Conclusion: Density may be viewed as fertile soil; increasing both risk of primary breast cancer, independent of subtype, and risk of recurrence. Thus, density should not only be taken into consideration in the screening setting, but also when making decisions on adjuvant therapy and follow-up regimes.

132

Poster

Recent Trends in Breast Cancer Incidence and Mortality Rates in South-Eastern European Countries

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Background: Breast cancer is the most frequent cancer in women across Europe, as well as worldwide. Incidence is increasing as a result from a variety of secular and exogenous influences. Studying the trends in incidence and mortality can serve the planning of breast cancer prevention policies at individual and collective level. The focus of this study is on South-Eastern European countries which have been underreporting, but may also show rapid changes. The EU FP7 EUROCOURSE project (www.eurocourse.org) aims to tackle problems of cancer registries in this part of Europe.

Materials and Methods: Within a broader project we analysed data from cancer registries in eight South-Eastern European countries, from Slovenia to Cyprus and Malta, also including Turkey. Age standardized (world standard – ASRW) incidence and mortality rates for 2008 were calculated for these countries based on the corresponding regional or national cancer registries. Average annual percent change (AAPC) with 95% confidence intervals of rates observed during 1999–2008 was calculated using joinpoint regression.

Results: Incident breast cancers comprised between 23% and 39% of all incident female cancers. Incidence rates (ASRW) varied from 35 to 82 per 100,000 women and were increasing with 1 to 4% in most of them, annually. Deaths due to breast cancer comprised between 13% and 25% of all female cancer deaths. Mortality rates (ASRW) varied between 7 and 20 per 100,000 women. In contrast to incidence, mortality was decreasing in most of the countries with 1 to 5% annually.

Conclusion: This geographical area, sharing common socioeconomic and demographic changes i.e. increased longevity, age at childbirth and decreased fertility rates, showed clear variation in breast cancer incidence and mortality. There were also effects of earlier detection through mass screening in a few countries, and as elsewhere improvements in adjuvant therapy.

133

Poster

Improved Survival of Bulgarian Breast Cancer Patients, Diagnosed in 2006–2009 Compared to Patients From an Earlier Period

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Background: Two important events, aiming improved quality of care for Bulgarian breast cancer patients took place in 2006 – an updated National standard for complex treatment of breast cancer was introduced and the National Health Insurance Fund (NHIF) requested establishment of specialized oncology committees in each hospital dealing with cancer patients. The function of those committees was to take decision about the best available individual treatment plan for all cancer patients.

The purpose is to study the impact on survival in relation to application of the National standard and requirements of NHIF.

Materials and Methods: We examined the data from the Bulgarian National Cancer Registry for female breast cancers, diagnosed in 2001–2009 and followed up to death or to the end of 2010. Characteristics of the patients – age, stage, grade, morphology and place of surgical treatment were compared between two periods – 2001–2005 and 2006–2009. Chi-square test, Kaplan–Meier method, Log-rank test and Cox regression method were used.

Results: There were 32546 female breast cancer cases, diagnosed in 2001–2009. We found statistically significant dependency ($P < 0.0001$) between period of diagnosis and each one of the examined factors. For the period 2006–2009, the proportions of patients younger than 40 years and older than 60 and of those, diagnosed in the first stage of the disease, were higher than the earlier period. There were improvements in morphological verification of the tumors – fewer patients with unknown grade and morphology were observed for the period 2006–2009. The proportion of patients, surgically treated in the National Hospital of Oncology was higher in 2006–2009. Five years survival was 63.7% and 70.0% for the periods 2001–2005 and 2006–2009, respectively ($p < 0.0001$). The risk of death was with 12% lower (Hazard ratio = 0.88, $p < 0.0001$) for the patients, diagnosed in 2006–2009, compared to the earlier period, after adjusting for age, stage, grade and place of surgical treatment.

Conclusions: The observed improvement of prognosis for breast cancer patients is possible to be explained with the strict application, required by NHIF, of the National standard for complex treatment in all hospitals where cancer patients were diagnosed and treated. Probably the increasing qualification of oncologists, introduction of more sensitive diagnostic techniques and improving health awareness of the women also attributed to better prognosis in recent years in a situation of preparation of population breast cancer screening program.

134

Poster

Clinical and Histological Features of Breast Cancer After in Vitro Fertilization

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Background: The role of in vitro fertilization (IVF) in the induction of breast cancer remains unclear. It is very interesting to examine if this type of breast cancer has some distinctive features regarding pathology or clinical characteristics.

Materials and Methods: A research of distinctive histological, clinical and epidemiological features in cases of invasive breast cancer following in vitro fertilization in our department. Thirty four (34) cases of invasive breast cancer were analyzed. Patient characteristics were extracted from their medical records and the breast cancer data bank of our department. The registered data concerned age, initial presentation, medical and family history, the histological features of the neoplasms and the TNM staging.

Results: The main findings are the following: 7(21%) patients were under 40 years old and the other 27(79%) were older, 27(79%) women were pre-menopausal and 12(35%) had positive family history. The great majority of patients 27(79%) were diagnosed with infiltrating ductal carcinoma and the grade was I in 10(29%), II in 14(42%) and III in 10(29%). Regarding the status of lymphnodes in 17(50%) was N₀, in 4(11%) N_x, in 3(9%) N₁, in 5(15%) N₂ and in 5(15%) N₃, as far as the stage of disease is concerned in 11(32%) was I, in 9(26%) II, in 10(30%) III and in 4(12%) IV. Finally regarding the status of ER, PgR and HER2 in 20(59%) was ER(+), in 17(50%) was PgR(+) and in 12(35%) was HER2(+).

Conclusions: Even though the sample was small, a large percentage of patients had a positive family history. It's worth mentioning that many cases presented in pre-menopausal women, relatively soon after in vitro fertilization. More data are needed in order to evaluate the role of IVF in the induction of breast cancer as well as to define the high-risk sub-groups. Patients with positive family history for breast cancer are considered to be a high-risk sub-group.

135

Poster

Preliminary Results of a Medical Unit for Prevention-consultation of Familial and Hereditary Breast Cancer

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Background: Most breast cancers are sporadic and not associated with any clear familial genetic predisposition. However, approximately 10% of

breast cancer patients have tumors that can be attributed to inherited mutations.

Materials and Methods: The aim of this medical unit is to develop a database, to perform long-term follow up of families with familial or hereditary breast cancer and to include both the patients and their families in special programs for prevention, follow up and timely treatment. Detailed clinical and pathological data as well as detailed family history are being input in an electronic database. Genetic testing is being performed after informed consent of high risk patients according to international risk calculation models for familial and hereditary breast cancer such as Gail model etc. Each input is confidential and secured with a unique ID.

Results: In total 986 cases have been collected in the database and they have been classified as sporadic, familial and hereditary according to the family tree. In particular 743 (75.5%) patients had sporadic cancer and 226 (23%) familial breast cancer. Moreover in this data bank there are 17 (1.5%) cases of male breast cancer. Regarding the treatment 12 women with family history of hereditary breast cancer underwent bilateral mastectomy and 5 of them underwent bilateral oophorectomy as well. Genetic testing and classification of high risk individuals is on-going.

Conclusions: Patients with familial or hereditary cancer benefit from a program of close follow up and treatment. There is a strong need for appropriate management and long-term follow up by special medical units for prevention and genetic consultation in this population.

136

Poster

Delays in Time to Treatment in Breast Cancer; Does It Really Have an Impact on Overall/Disease Free Survival?

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Background: Time interval from diagnosis of breast cancer to treatment has been promulgated as one factor that can be used to evaluate cancer care quality. It remains controversial, however, whether a delay to treatment impacts survival. The purpose of this study was to evaluate whether delays from diagnosis to initial first treatment in breast cancer impacts overall and disease free survival.

Material and Methods: A retrospective review of patients undergoing breast cancer treatment between 2000 and 2010 in both Qaem and Omid university hospital was undertaken. The interval to treatment was defined as the time between date of pathological diagnosis, usually via open biopsy, and the date of initial therapy, either surgical or systemic. In statistical analysis, overall survival time was calculated as the interval from the date of diagnosis to the last clinical control or death; disease free survival time was calculated as the interval between the date of diagnosis to the metastasis and/or recurrence. This study was approved by Ethics Committee affiliated to the Deputy of Research.

Results: 452 patients were included in this study. The median value was 15 days for time to first treatment. Initial analysis was revealed that survival is dependent on the stage of presentation. Subsequent analysis was therefore performed to evaluate the impact of the delay itself upon overall / disease free survival. The patients were divided into 2 groups based on interval to treatment. There was no association between the interval to treatment after a diagnosis of breast cancer and overall / disease free survival.

Conclusions: Time to treatment may not be a meaningful indicator of cancer care quality because it was no effect on overall/ disease free survival. It seems that surgeons need to reconsider the time of surgery. Because after diagnosis, patients need time to decide between different treatment options and make psychological counseling.

137

Poster

Breast Cancer and Multiple Primary Tumors in the Belorussian Cancer-registry

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Background: Breast cancer is the leading cause of cancer-related death for women in Belarus. The risk of breast cancer after an earlier primary cancer, as well as the risk of developing multiple primaries after an earlier breast cancer was studied.

Materials and Methods: The retrospective cohort study used a cohort consisting of 643693 cancer cases diagnosed between 1990 and 2007. Cases were identified from records of the Belorussian National Cancer Registry and followed for breast cancer development through 2007. Proportions and Standardized Incidence Ratios (SIR) of synchronous (latency between diagnosis's less than a year) and metachronous primary multiple breast cancers (PMBC) were investigated. It was considered

3070 PMBC (898 synchronous and 2172 metachronous with first tumor in breast).

Results: More often synchronous breast cancer combines with tumors of breast, skin and corpus uteri. Significantly high difference between observed and hypnотically expected (on the base of population incidence level) numbers was noted for all synchronous PMBC and for secondary cancers of colon (SIR=1.6; 95% CI 1.1–2.35), rectum (SIR=2.48; 95% CI 1.8–3.37), stomach (SIR=2.2; 95% CI 1.7–2.8), breast (SIR=5.1; 95% CI 4.52–5.74), kidney (SIR=3.87; 95% CI 2.74–5.31), thyroid gland (SIR=3.58; 95% CI 2.48–5.01), ovary (SIR=3.23; 95% CI 2.4–4.26), melanoma of skin (SIR=4.13; 95% CI 2.52–6.38). The highest risk of synchronous PMBC was established for combination with salivary glands (SIR=5.19; 95% CI 1.07–15.16). Metachronous PMBC with first breast cancer was more frequently noted with tumors of skin, breast and corpus uteri. The highest risk of metachronous PMBC was established for combination with esophagus (SIR=3.17; 95% CI 1.45–6.01), breast (SIR=3.0; 95% CI 2.8–3.2), lung (SIR=2.3; 95% CI 1.8–2.8), corpus uteri (SIR=1.6; 95% CI 1.4–1.9), ovary (SIR=2.5; 95% CI 2.1–2.9), kidney (SIR=1.5; 95% CI 1.2–1.9), thyroid gland (SIR=1.7; 95% CI 1.4–2.15), vulva (SIR=2.0; 95% CI 1.1–3.1). Significantly low risk after breast cancer was noted for tumors of cervix uteri (SIR=0.73; 95% CI 0.53–0.99) and liver (SIR=0.21; 95% CI 0.03–0.76). Significantly often breast cancer was developed after corpus uteri (SIR=1.2; 95% CI 1.02–1.4), ovary (SIR=2.0; 95% CI 1.6–2.5), thyroid gland (SIR=1.6; 95% CI 1.2–1.9) and significantly rare after cancer of rectum (SIR=0.6; 95% CI 0.4–0.9).

Conclusions: High risk of PMBC could be caused by common etiological factors. Low rates (as for cervix uteri and liver cancer) could give evidence that breast cancer treatment decreases the risk of secondary tumors.

138

Poster

Recall Mammography and Psychological Distress

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Background: Despite the success of the mammography screening programme, concerns are still being voiced regarding the adverse psychological impact in regard to recall mammography (i.e. false positives). Our object was a) to determine psychological distress before and after being diagnosed without or with cancer in women recalled for further investigation and b) the willingness to attend and recommend screening.

Methods: During the period March 2009 to May 2010, 641 women recalled for further investigation at Oslo University Hospital after attending the Oslo mammography screening, were given questionnaires (The Hospital Anxiety and Depression Scale (range 0–21), reactions and attitudes to screening and background data) before and four weeks after receiving the result. Eighty-two percent filled out the questionnaire at both time points.

Results: The majority were diagnosed without cancer after recall (87.6%). HADS-anxiety in the total sample decreased from 6.1 (4.1–SD) to 4.6 (3.5), $p < 0.0001$, whereas HADS-depression increased slightly 2.4 (2.7) vs 2.7 (2.9), $p = 0.001$. The corresponding figures for patients with cancer ($n = 80$) were 6.6 (4.1) vs 5.6 (3.9) and 2.7 (2.9) vs 3.4 (3.5), for patients without cancer 6.1 (4.1) vs 4.5 (3.4) and 2.4 (2.8) vs 2.6 (2.8) and in the general Norwegian population 4.8 (3.6) and 3.7 (3.2). Women with previous anxiety and depression ($n = 46$), diagnosed without cancer had significantly higher scores than those without (previous anxiety and depression) after recall, with anxiety 11.0 (4.7) vs 8.6 (3.7) and depression 10.8 (4.1) vs 13.9 (2.1) at the two time points ($p < 0.0001$).

Nearly all women (99%) were satisfied with their participating in the screening programme, and 94% thought it was important. About 50% reported that the mammogram caused them moderate to severe pain. Ninety-eight percent would accept an invitation to the next round of screening and 99% would recommend other women to participate.

Conclusion: Recall after mammography was associated with transiently increased anxiety. There was a slight increase in depression among women diagnosed without cancer. Four weeks after screening, the level of anxiety was at the same, and depression at a lower level than in the general Norwegian population. The women were almost unanimously content with participating in the screening, will participate again and recommend other women to participate.