

line (84%) and biologics in second and third lines (80–100%) compared to other EU-5 countries. In the first line chemotherapy-only patients, 84.9% were on a doublet/triplet therapy, while this reduced to 20%, 22% and 16% in second, third and fourth lines, respectively. UK differed in the use of doublet/triplet from other countries – 92% in first line, 16% in second, and none in third and fourth lines.

Conclusion: Combination therapy is predominantly used in first line. Chemo-only therapies are used frequently in first line while targeted therapies dominate second and third lines. In most findings, UK differed from the other EU-5 countries.

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POSTER

Anti-oestrogen Therapy for Breast Cancer Modifies the Risk of Subsequent Cutaneous Melanoma

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Background: Increased risk of subsequent cutaneous malignant melanoma (CMM) after a first cancer is a common observation and has been attributed to better medical surveillance or/and to anti-cancerous treatments. Several studies suggested that oestrogens could be a risk factor for CMM. If this is true, use of anti-oestrogens should be associated with a decreased risk of CMM. We compared CMM incidence in a cohort of breast cancer patients with and without anti-oestrogen therapy.

Material and Methods: The cohort consisted of 7,360 breast cancer patients recorded between 1980 and 2005 at the Geneva Cancer Registry and followed until December 2008. Among these women, 54% (3,358) received anti-oestrogens. We compared CMM occurrence among patients with and without anti-oestrogens with that expected in the general population using age and period Standardized Incidence Ratios (SIRs).

Results: After a mean follow up of 7.5 years, 34 women developed a subsequent CMM. Compared with the general population the risk of CMM was higher for patients who did not receive anti-oestrogens treatment (SIR: 1.60, 95% confidence interval [CI]: 1.08–2.12, $p=0.02$). On the contrary, the risk was close to 1 (SIR: 0.98, 95% CI: 0.40–1.56, $p=0.572$) for patients who received anti-oestrogens.

Conclusions: This study shows that anti-oestrogen therapy modifies the risk of melanoma after breast cancer and further supports the hypothesis that oestrogens could play a role in melanoma occurrence.

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POSTER

Clinical Characteristics and Outcome of Treatment of Brazilian Women With Breast Cancer Treated at Public and Private Institutions

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Background: Breast cancer is the most common type of cancer among Brazilian women with almost 50,000 new cases per year. There are few data regarding the clinical presentation, treatment and specially outcome of this population. Brazilian health system is composed by Public institutions (Pu), Private centers (Pr) and some institutions that assist both Public and Private patients (PuPr).

Material and Methods: We collected data from 17 cancer centers distributed throughout Brazil among Pu; Pr and PuPr centers. We've analyzed: 1-clinical characteristics, 2- pathologic characteristics and 3-type of treatment received among 2435 patients from May 2008 to May 2009.

Results: Mean age at diagnosis was 53 years, with about 30% below age 50. Most of the cases were Invasive Ductal Cancer (83%). Stage 0 was seen in 3.2%, Stage I in 21.8%, Stage II in 46.6%, Stage 3 in 24.6% and Stage IV in 3.9%. Clinical Stage III + IV was seen in 18.5% of the Pu institutions, only 3.7% of the Pr ones and 6.2% among PuPr. Hormone receptors were positive in 55%. Her-2 was overexpressed in 27.3% of the patients, and triple negative were seen in 11.6%. Most of the patients were submitted to surgery (92.9%). In Pu institutions only 36% of the patients were submitted to Breast Conserving Surgery (BCS); in the Pr institutions

49.4% of the patients and in the PuPr 47%. Breast reconstruction was made in 15.8% and did not differ between Pu and Pr institutions. Sentinel node biopsy was done in 30.6% of the patients (26.8% of the patients from the Pr institutions and 26.8% of the Pu ones and 33% among PuPr). Neoadjuvant treatment was done in 21.5% of the patients (Pu = 27.2%; Pr = 13.9% and PuPr = 13.2%). Most of this neoadjuvant treatment was chemotherapy (93.8%) and only 4.3% was hormone therapy (HT). 30% of the patients received AC, 41% A+taxane and 18.9% FAC/FEC. Only 1.1% of the patients received trastuzumab in the neoadjuvant setting. Tamoxifen was used in 48.3% when neoadjuvant HT was done, and aromatase inhibitor (AI) was used in 34.5%. Most of the patients received any kind of adjuvant treatment (89.2%). Chemotherapy was done in 76.6% and hormone therapy in 69.8%. When chemotherapy was used the most common regimen was FAC/FEC (27.3%), followed by CMF (17.5%) and AC (11.9%). Trastuzumab was used in only 5.8% of the patients (Pu = 6.8%, Pr = 18.3% and PuPr = 3%). Tamoxifen (TAM) was prescribed in 69.8% of the cases (Pu = 87.6%, Pr = 79.6% and PuPr = 78.8%), AI in 8.2% (Pu = 5.9%, Pr = 9.3% and PuPr = 13.8%), and sequential TAM/AI in 6.6% (Pu = 6.1%, Pr = 8.3% and PuPr = 6.4%). About 17% of the patients had metastasis and the most common ones were bone lung and liver.

Conclusions: There are important differences between the public and private institutions in Brazil, the patients from the Pu institutions were five times more likely to be diagnosed in stage III or IV, they usually receive neoadjuvant treatment, and when surgery was done, most of them were treated with radical procedures. Besides the overexpression of Her-2 (30%) a minority of the patients received treatment with trastuzumab even for the Private centers (high cost for a developing country).

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POSTER

Thyroid Cancer and Multiple Primary Tumours in the Belorussian Cancer Registry

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Background: Thyroid cancer incidence rates have started increasing sharply in the Belarus since 1986 when Chernobyl disaster happened. Radiation exposure of ¹³¹I at a young age is a strong risk factor, but otherwise the etiology is unclear. We studied the risk of thyroid cancer after an earlier primary cancer, as well as the risk of developing multiple primaries after an earlier thyroid cancer in Belorussian cancer patients from 1990 to 2007.

Materials and Methods: Cases were identified from records of the Belorussian National Cancer Registry and followed for multiple primary cancer development till 2008. Proportions and Standardized Incidence Ratios (SIR) of synchronous and metachronous primary multiple thyroid cancers (PMTTC) were investigated. Only double combinations were considered (971 PMTTC cases: 181 males and 790 females).

Results: In males the highest significant risk of metachronous PMTTC was established for combination with Hodgkin's lymphoma (SIR = 18.1; 95% CI 7.8–35.5 – when Hodgkin's lymphoma developed first and SIR = 8.6; 95% CI 2.3–22.0 – when Hodgkin's lymphoma developed secondary). Similar situation was observed for females (SIR = 5.5; 95% CI 2.7–9.8 – when Hodgkin's lymphoma developed first but no cases of PMTTC when Hodgkin's lymphoma developed secondary). Apart Hodgkin's lymphoma significantly high risk of secondary cancer was noted for tumours of kidney, rectum and leucosis in males and of lung, kidney, breast, corpus uteri, colon, skin, melanoma and leucosis in females. Significantly high SIR were found for PMTTC after tumours in kidney, larynx, pharynx, colon, after melanoma, leucosis in males and after neoplasms of kidney, pharynx, breast, lung, melanoma, bones and leucosis in females.

Conclusions: High association of thyroid cancer with Hodgkin's lymphoma, leucosis, kidney cancer and bones sarcomas could be an evidence of radiation impact (due to treatment or due to environment). High level of synchronous diagnosis of tumours located near thyroid gland could be caused by more intensive medical attention to that area.

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POSTER

Solid Cancer Incidence in the Republic of Belarus (1970–2010) – 16 Years Before and 25 Years After Chernobyl Accident

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Background: Despite of many studies of the relation between huge radiation contamination by different radioactive elements and changes of cancer incidence rates in Belarus, the question on the outcome of this disaster has not still lost its actuality.

Methods: The data of obligatory cancer registration were studied for the past 41-years. Age Standardized Incidence Rates (ASR_{World} per 100 000) in

males and females (urban and rural) were calculated and Average Annual Percentage Changes (APC) were investigated.

Results: From 1970 to 2010 1 095 963 new cancer cases (547653 (49.98%) – in males and 548310 (50.02%) – in females) have been established in Belarus. In the analysis five main types of time-related ASR trends were distinguished. (1) Considerable decrease was shown in ASR of males and females stomach cancer as in lip cancer in males. (2) No considerable changes in ASR were detected for liver, pancreas, oesophagus, larynx, lung and bladder female cancers. (3) Constant growth of ASR was noted for colon cancer and melanoma of skin in both males and females and for breast, corpus uteri and renal female cancers. (4) ASR for female and male recto-sigmoidal cancer and male cancers of oesophagus, larynx, lung and bladder had been increasing till the middle of the 90s to be fixed at a certain level then. Thyroid cancer incidence jumped immediately after disaster from 0.45 in 1970th and 0.77 in 1986th to 3.2 in 2003^d (males) and from 0.81 in 1970th and 1.71 in 1986th to 14.9 in 2003^d (females). Since 2003^d morbidity has been flattened out both in males and females. The highest level of thyroid cancer incidence is noted in Mogilev, Gomel and Brest regions (most radiation contaminated). (5) Incidence rates for skin cancers in the both sexes, prostate and renal cancer in males slowly increasing from the 70s started growing rapidly in the middle of the 90s.

Conclusions: Despite of differences in structure and dynamics of cancer incidences in males and females the total number of new cancer cases was equal in both sexes. The above-mentioned ASR trends may be indicative of the impact of some environmental factors at certain periods of time which are modifying cancer incidence trends. Now we are working at cancer mapping through 118 administrative areas of Belarus to study mentioned above tendencies in details and propose some possible carcinogens to provide a basis for further analytical epidemiological studies.

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POSTER

Febrile Neutropenia Rates With Common Chemotherapy Regimens in Randomized Controlled Trials Compared With Non-randomized Cohort Studies – a Systematic Review and Meta-regression

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Background: Physicians commonly use febrile neutropenia (FN) rates from randomized controlled trials (RCTs) to decide on the need for primary prophylaxis (PP) with granulocyte colony-stimulating factor according to thresholds recommended by clinical guidelines. Patients in RCTs are highly selected, and their risk of FN may be lower than those from the unselected patient population. The FN rates from non-randomized cohort studies may be more generalisable to the unselected population.

Materials and Methods: A systematic review of all reported RCTs and non-randomized prospective and retrospective cohort studies was undertaken using Embase and Medline databases. Abstracts and journal articles published between 1996 and 2010 with recorded FN rates were included for breast, lung, and colorectal cancer chemotherapy regimens. Regimens were selected if there was at least one cohort study design and one RCT study design. Meta-regression, using logistic regression with random effects for each included study, was used to model the odds ratio (OR) of FN in non-randomized cohorts compared to RCT cohorts, adjusting for confounders.

Results: Based on 14 chemotherapy regimens and 101 publications, including 88 journal articles and 13 abstracts, 120 separate patient cohorts (49 from non-randomized cohort studies and 71 from RCTs) were included in the analysis. In total, 31,936 patients were analyzed and 2,538 had FN. The unadjusted FN rate of 15.83% (763/4,820) in the non-randomized cohorts was significantly higher than the rate of 6.55% (1,775/27,116) in the RCT cohorts (OR=2.33; 95% CI, 1.58 to 3.44; p = <0.001). Adjusting for regimen, publication vs. abstract, metastatic status, and age, the FN rate remained significantly higher in the non-randomized cohorts compared to the RCT cohorts (OR=1.69; 95% CI, 1.11 to 2.58; p = 0.035).

Conclusions: The RCT study design underestimates FN rates in breast, lung, and colorectal cancer patients compared to non-randomized cohort study designs, which may have better generalisability to the unselected patient population. Well designed population-based cohort studies are needed to determine the real world FN risk of chemotherapy regimens to guide the use of PP.

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POSTER

Low-carbohydrate, High-protein Score and Cancer Incidence and Mortality in a Northern Swedish Population

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Background: Our purpose was to examine long-term effects of low-carbohydrate, high-protein (LCHP) diets in relation to cancer incidence and mortality in a large, population-based cohort.

Material and Methods: Baseline data from 36,660 men and 38,718 women in the population-based Västerbotten Intervention Program cohort were collected up to 18 years prior to cancer event (incident cancer and/or cancer death). Energy-adjusted descending deciles of carbohydrate and ascending deciles of protein intake were added to create an LCHP score (2–20 points). Sex-specific hazard ratios (HRs) for all-cause and site-specific cancer incidence and mortality were calculated by Cox regression analysis. Multivariate models were adjusted for age, body mass index, sedentary lifestyle, education, current smoking, and intake of alcohol, energy and saturated fat.

Results: A diet relatively low in carbohydrates and high in protein (LCHP score 14–20 points) was not associated with cancer incidence (number of cases = 3300) or mortality (number of deaths = 2503) in general in this population, compared to low LCHP scores (2–8 points). A tendency of a possible increased risk of incident endometrial cancer was noted in women with high versus low LCHP scores, in analyses limited to adequate energy reporters (number of cases = 42): multivariate HR 3.36, 95% CI 1.13–9.94, P for continuous = 0.070. Similarly, a tendency of a possible increased cancer mortality was found in 50-year-old women with high versus low LCHP scores (number of deaths = 170): multivariate HR: 1.38, 95% CI: 0.83–2.27; P for continuous = 0.074. Results were strengthened when HRs were calculated for LCHP scores based solely on animal protein, and attenuated when calculated on LCHP scores based solely on vegetable protein.

Conclusion: A diet relatively low in carbohydrates and high in protein does not generally predict altered risk of cancer incidence or mortality in this cohort. Further studies of long-term effects of LCHP in different age groups and in female cancer sites are warranted.

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POSTER

Epidemiology of Febrile Neutropenia

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Background: Neutropenia is the most important risk factor for development of infections on the oncologic patients, and it is the main dose limiting toxicity and cause of delay on the administration of the anti-tumoral treatment, with a potential impact on the efficacy.

Febrile neutropenia must be suspected on patients with fever and discomfort who had received chemotherapy previously. In the 50% of those patients we can not demonstrate infection, 30% we can prove an infection, mainly bacterial, with microbiologic cultures and a clinical infection can be detected in almost 20%.

Material and Methods: This a retrospective study, we analyzed 87 patients with febrile neutropenia diagnosed on 1998, 2003 and 2008 at the Hospital Puerta de Hierro of Madrid, Spain.

The main objective was to determine if there was a difference on the micro-organism isolated on blood cultures in the last 10 years in these kind of patients. As secondary objectives we analyzed differences on chemotherapy schedules, degree of neutropenia, and antimicrobial treatment.

Results: 9 patients were excluded because of the lack of information because they did not achieved the inclusion criteria. 24 patients (30.8%) of the 78 included were diagnosed of febrile neutropenia on 1998, 41 patients (52.6%) on 2003, and 13 (16.7%) on 2008.

Blood cultures were obtained on 56 of the 78 patients included (71.8%), and we isolated any kind of bacteria on 16 (28.5%): 4 Gram negative (7.1%), 12 Gram positive (21.4%). On 26 patients (42.6%) we did not isolate any bacteria.

Conclusions: As published previously in our study the main group of bacteria isolated were Gram positive, mainly *S. aureus*, meanwhile there is a fall on the isolation of Gram negative during the last 10 years, with an important number of *P. aeruginosa* isolated in our hospital, main difference