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 1970^{th} and 0.77 in 1986^{th} to 3.2 in 2003^{d} (males) and from 0.81 in 1970^{th} and 1.71 in 1986^{th} to 14.9 in 2003^{d} (females). Since 2003^{d} morbidity has been flatten 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.

3509 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.

3510 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.

3511 POSTER

Epidemiology of Febrile Neutropenia

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Background: Neutropenia is the most important risk factor for de development of infections on the oncologic patients, and it is the main dose limitant 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 determinate 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

with other hospitals were the most important Gram negative is E. coli. We also find differences on the antibiotic treatment. No differences on the degree of neutropenia or chemotherapy schedules were detected.

3512 POSTER

Survival From Childhood and Young Adult Cancer in Northern England, 1968–2005

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Background: The study aimed to investigate trends in survival from cancer in children and young adults resident in northern England.
Methods: All cases aged 0−24 years, diagnosed with a primary malignancy during the period 1968–2005, were obtained from a specialist registry. Five year survival rates were calculated using Kaplan- Meier estimation for four successive time periods. Cox regression analysis was used to investigate factors that may influence survival. Analyses were carried out separately by gender and age group (0−14, 15−24 years).
Results: The study included 2958 cancer cases aged 0−14, the five year survival rates for all cancers improved from 39% in 1968–1977 to 79% in 1998–2005 ($P < 0.0001$). From the earliest to the latest time period, the five year survival rate for leukaemia increased from 24% to 81% ($P < 0.0001$), for lymphoma increased from 46% to 87% ($P < 0.0001$), for central nervous system (CNS) tumours increased from 43% to 73% ($P < 0.0001$), for sympathetic nervous system tumours increased from 17% to 66% ($P < 0.0001$), for bone tumours increased from 21% to 75% ($P < 0.0001$), for soft tissue sarcoma increased from 30% to 58% ($P = 0.0001$) and for germ cell tumours increased from 59% to 97% ($P = 0.0002$). The survival was worse for cases of acute lymphoblastic leukaemia ($P < 0.001$) and astrocytoma ($P < 0.001$) aged 10−14 years compared with 0−4 year olds. For 2958 cases aged 15−24, the five year survival rates for all cancers improved from 47% in 1968–1977 to 83% in 1998–2005. From earliest to the latest time period, survival rate for leukaemia increased from 2% to 57% ($P < 0.0001$), for lymphoma increased from 66% to 87% ($P < 0.0001$), for CNS tumours increased from 52% to 81% ($P = 0.002$), for bone tumours increased from 35% to 55% ($P = 0.02$), for germ cell tumours increased from 41% to 95% ($P < 0.0001$) and for carcinomas increased from 56% to 93% ($P < 0.0001$). The survival was worse for cases of acute lymphoblastic leukaemia ($P = 0.006$) aged 20−24 years compared with 15−19 year olds but better for non-Hodgkin lymphoma cases ($P = 0.01$).
Conclusions: There were marked improvements in survival from childhood and adolescent cancer in northern England over the last four decades. Future work should examine factors that could lead to further improvement in survival such as delays in diagnosis.

3513 POSTER

Alcohol Intake in Norwegian Women and Mammographic Density

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Background: Alcohol intake has previously been associated with increased breast cancer risk. Mammographic density is a strong risk factor for breast cancer, but the association between alcohol consumption and mammographic density is not clear. We assessed this association among women who participated in the Norwegian Breast Cancer Screening Program (NBCSP) in 2004.
Material and Methods: We analyzed mammograms from 2251 postmenopausal women aged 50−69 years. Mammographic density was assessed on digitized mammograms using a computer assisted method. Frequency and amount of current beer, red wine, white wine and liquor consumption was assessed using a validated food frequency questionnaire. Non-drinkers were defined as complete abstainers. We used multivariate linear regression models to estimate least square means of percent mammographic density by categories of alcohol intake with adjustment for potential confounders. We also checked for effect modification by stratifying the analysis by age, body mass index and hormone therapy.
Results: The mean percent mammographic density was higher among drinkers as compared to non-drinkers in the unadjusted analysis, 18.7% (95% CI: 18.0–19.4%) and 14.9% (95% CI: 13.0–16.7%) respectively ($p = 0.001$). However, after adjustment for confounders there was no difference in percent mammographic density between drinkers (mean 18.3%, 95% CI: 17.6–18.9%) and non-drinkers (mean 17.8%, 95% CI: 16.1–19.4%) ($p = 0.59$). There was no indication that amount of alcohol consumed was associated with mammographic density, with the mean density among women with highest intake (>12 gm of alcohol per day) of 18.0% (95% CI: 16.9–19.0%), only marginally higher than that of non-drinkers (p for trend across six categories of intake = 0.62). Similarly there was no association between type of beverage and mammographic density. There was no effect modification by age, body mass index or hormone therapy.
Conclusions: We found no evidence of an association between alcohol intake and mammographic density.

3514 POSTER

Screening for Hepatitis B Virus in a Department of Clinical Oncology in Spain

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Background: Hepatitis B virus (HBV) is a major global health problem. Two-thirds of patients with acute infection have subclinical disease and the majority of patients with chronic HB infection are asymptomatic. Spain is considered an intermediate endemic area (HBsAg prevalence between 2% and 8%). The American Association for the Study of Liver Diseases (AASLD) recommends screening for HBV in individuals born in high and intermediate endemic areas, and in patients to receive immunosuppressive therapy, since reactivation of HBV replication occurs in 20% to 50% of HB carriers undergoing immunosuppressive or chemotherapy, during or after completion of chemotherapy. Reactivation is mostly asymptomatic, but symptomatic flares and liver decompensation can develop and can be prevented with antiviral prophylaxis. By the moment screening for HBV is not current practice in Oncology Consultancy because the risk population is not yet completely defined and other Associations like ASCO don't recommend screening in all the patients.
Material and Methods: We analyzed prospectively serum HBsAg, anti-HBc and anti-HBs in all the patients with solid tumours coming to first visit in our Department between February, 4 and July, 31, 2011. We recognized treatment plan and risk factors associated: history of o current intravenous drug use, men who have sex with men, history of multiple sexual partners or sexually transmitted diseases, chronically elevated transaminases, Hepatitis C virus or VIH infection, blood donors, renal dialysis, pregnant women, previous immunosuppressive therapy. If HBsAg and/or anti-HBc were positive and anti-HBs (−) we measured viral DNA with PCR. Lamivudine is the agent used por prophylaxis.
Results: We present results until 5th of April-2011, the final results will be presented at the meeting. We have analyzed 128 patients, all of them born in Spain.

Serum results	No. (%)	Risk factors associated, No. (%)	Tumour location: No.	Treatment plan: No.
No infection: HBsAg(−), anti-HBc(−), anti-HBs(−)	101 (78.9%)	Yes: 10 (9.9%, 6 chronically elevated transaminases, 4 others). No: 91 (90%)	Colorectal: 22 Breast: 31 Lung: 16 Others: 32	Follow-up: 15 Chemotherapy: 73 Hormone: 7 Biological: 2 Others: 4
Chronic infection: HBsAg(+),anti-HBc(+), anti-HBs(−)	0 (0%)	–	–	–
Previous infection, now immune: HBsAg(−), anti-HBc(+), anti-HBs(+)	22 (17.1%)	Yes: 3 (13.6%, chronically elevated transaminases) No: 19 (86.3%)	Colorectal: 5 Lung: 3 Breast:5 Others: 9	Follow-up: 5 Chemotherapy:12 Hormone:3 Biological:2
Occult infection or other possibility: HBsAg(−), anti-HBc(+), anti-HBs(−)	5 (3.9%)	Yes: 0 No: 5 (100%)	Colorectal: 3 Lung:2	Follow-up: 2 Chemotherapy: 2 Biological: 1

Conclusions: 3.9% of patients, by the moment, had occult infection or other possibility; all of them had anti-HBc IgM (−), pending of viral DNA, none of them had risk factors associated and only 2 were receiving chemotherapy. We expect that by end of July-2011 with more patients analyzed we are able to decide if routine screening for HBV in patients to receive immunosuppressive therapy is really cost effective.

3515 POSTER

Clinical Characteristics and Prognostics Factor in Ecuadorian Patients Adults With Non-Hodgkin Lymphoma

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Background: The clinical characteristics and epidemiology of Non Hodgkin Lymphoma are different in diverse geographical regions and racial populations. Follicular lymphoma is more common in the United State and