history, reproductive and hormonal status, diet, alcohol, tobacco, and occupational information are being collected just as histology, stage, treatment and survival.
Results: From October 2007 to February 2009, 409 female newly diagnosed of lung cancer were collected in an e-database in 22 Spanish centers. Patients (p) characteristics are: median age 61.7 years (y) (range: 36−87); Caucasian: 98.2%; Marital status (%): married 67.7, unmarried 11.2, divorced 7.1, widow 14. Educational level (%): basic 57.4, secondary 29.1, university 13.5. Median age of menarche 12.7 y. Children: 79.4% (median: 2); Median age of first child 27 y. Oral contraceptive: 30.6%. Pre-menopausal 15.4%, postmenopausal 84.6%. Median age of menopause 46.7 y. HRT: 5.3%. Median duration of HRT: 4.4 y. Obesity: 11.3%. Smoking habit (%): never (passive smoker/no exposition)/former/current smokers: 42 (42.8/57.2)/19/39; Median packs/year 72.4. Former smokers: 1−5/5−10/10−15/>15 y (%): 51/11.8/7.8/29.4. Work exposure 3.5%. Alcohol consumption 3.2%. Familiar history of cancer: 45.5% (lung cancer 29.7%). Previous history of cancer 13.8% (breast 33.3%). Current lung cancer histology (%): adenocarcinoma/BAC/squamous/large cell/NOS: 70.4/5.7/10.4/7.9/5.7. SCLC 11.8%. TNM I/II/III/IV (%): 16/3.9/28.7/51.4. Surgical treatment 24.7% (lobectomy/pneumonectomy/exploratory: 85.5/9.2/5.3%). Available data of 122 stage IV NSCLC p: 74.6% receive chemotherapy, 92.3% of them two drugs and 68.9% platinum-based (59% cisplatin). EGFR mutations analysis 7.9%.
Conclusions: According this series, 42% Spanish lung cancer women are never smokers and 70.4% have adenocarcinoma. Other collected information, choice of treatment and survival outcomes will be also analyzed.

9032 POSTER

The effects of prenatal factors on the development of non-small cell lung cancer

F. Ozdemir[1], S. Ozdemir[2], B. Yildiz[1], E. Fidan[1], H. Kavgaci[1], F. Aydin[1].
[1]Karadeniz Technical University Medical Faculty, Medical Oncology, Trabzon, Turkey; [2]Karadeniz Technical University Medical Faculty, Family Medicine, Trabzon, Turkey

Background: Lung cancer is still the most frequently encountered cancer and the leading cause of deaths from cancer. The effect of certain prenatal factors on the overall health of infants has been investigated for a long time. The aim of the present study was to investigate the possible effects of prenatal factors on the development of non-small cell lung cancer (NSCLC). Materials-Metods: The study participants included 101 patients with NSCLC, who attended the Medical Oncology Outpatient Clinic of the Farabi Hospital at the Karadeniz Technical University School of Medicine. The same questionnaire was applied to both the patient and control groups. Prenatal factors, together with other known factors for the development of NSCLC, were addressed via this questionnaire. The normality of the distribution of data was evaluated by using the Kolmogorov Smirnov test for each group. The Student t-test was used for comparison of variables with a normal distribution, both in the NSCLC and control groups. Qualitative data were analyzed via a chi-square test.
Results: It was determined that patients with NSCLC had older parents compared to the control group ($p < 0.0005$; $p < 0.0005$). In addition, a lower level of education, lower income, larger families, increased prevalence of smoking in the patients, increased prevalence of smoking in the patient's father, and having more first degree relatives with a history of cancer were detected in the patient group compared to the control group ($p < 0.0005$). Also, the height of the patients was shorter than the height of the control group ($p = 0.003$). When the patients were classified as normoweight, overweight, or obese according to their body mass index, a lower ratio of patients with NSCLC was overweight when compared to the control group ($p < 0.0005$).
Conclusison: In light of the present study, having older parents is a risk factor for the development of NSCLC, in addition to other known risk factors. Further comprehensive studies are needed in this subject.

9033 POSTER

Multicenter evaluation of malignancy in small-sized lung adenocarcinomas: revision of variations among institutions and underestimation generated by tumor size on PET/CT values using a phantom study

Y. Tsutani[1], H. Daisaki[2], H. Nakayama[3], S. Okumura[4], S. Adachi[5], M. Yoshimura[6], H. Sakai[5], K. Otsu[7], M. Okada[1]. *[1]Hiroshima University, Surgical Oncology, Hiroshima, Japan; [2]National Cancer Center, Radiology, Tokyo, Japan; [3]Kanagawa Cancer Center, Thoracic Surgery, Yokohama, Japan; [4]Cancer Institute Hospital, Thoracic Surgery, Tokyo, Japan; [5]Hyogo Cancer Center, Radiology, Akashi, Japan; [6]Hyogo Cancer Center, Thoracic Surgery, Akashi, Japan; [7]Kanagawa Cancer Center, Radiology, Yokohama, Japan*

Background: Malignant biological aggressiveness of small lung adenocarcinomas (AD) remains unclear, and understanding this feature is critical for choosing suitable treatment. We evaluated malignancy using fluorodeoxyglucose-positron emission tomography/computed tomography (PET/CT), high-resolution CT (HRCT) and postoperative pathological examination in a multi-institutional setting. Moreover, we focused on inconsistencies generated by multicenter studies resulting from PET/CT instruments of variable quality and inconsistencies induced by small tumors.
Materials and Methods: A total of 201 patients with clinical T1N0M0 AD underwent PET/CT and HRCT followed by complete resection. We analyzed relationships among components of bronchioloalveolar carcinoma (BAC) on pathological specimens and maximum standardized uptake values (maxSUV) on PET/CT, the ground-glass opacity (GGO) ratio and tumor disappearance rates (TDR) on HRCT, and the associations between these findings and surgical outcomes. MaxSUV data were adjusted by an experimental phantom study (corrected maxSUV), and underestimation of corrected maxSUV data by tumor size were successively revised using a correction equation based on the phantom study (PVC-maxSUV).
Results: The phantom study decreased overall variations in maxSUV among institutions from 7.5% to 3.9%. PVC-maxSUV, pathological BAC ratio, TDR and the GGO ratio reflect tumor malignancy grade in that order in terms of lymphatic permeation, vascular and pleural invasion and nodal metastasis. Although TDR ($R2 = 0.5082$) and the GGO ratio ($R2 = 0.5860$) closely correlated with the BAC ratio, PVC-maxSUV ($R2 = 0.2652$) and corrected maxSUV ($R2 = 0.2628$) were far less important preoperative indicators of the pathological BAC proportion. PVC-maxSUV (cutoff value = 4.0, $p = 0.001$), corrected maxSUV (cutoff value = 2.5, $p = 0.003$) and the pathological BAC ratio (cutoff value = 50%, $p = 0.010$) were significant prognostic factors of disease-free survival, whereas the GGO ratio (cutoff value =50%, $p = 0.054$) and TDR (cutoff value = 50%, $p = 0.202$) were not.
Conclusions: Phantom studies can minimize inter-institutional variations and underestimations induced by tumor size on maxSUV, which reflects malignant biological grade in clinical T1N0M0 AD, independently to the BAC ratio. Preoperative PET/CT assessment in addition to HRCT is useful for selecting appropriate strategies for treating small lung AD.

9034 POSTER

Medical treatment choices of over 1000 Italian patients affected by stage IIIB-IV NSCLC in routine clinical practice: results from the observational "SUN" (Survey on the lUng cancer maNagement) study on behalf of SUN study Group

S. Barni[1], E. Bajetta[2], F. De Marinis[3], L. Crinò[4], A. Ardizzoni[5], A. Caprioli[6], A. Favaretto[7], R. Giannicola[8], G. Filippelli[9], C. Gridelli[10]. *[1]Ospedale Treviglio Caravaggio, Medical Oncology/Pneumology, Treviglio, Italy; [2]Istituto Nazionale Tumori, Medical Oncology/Pneumology, Milano, Italy; [3]Az. Osp. San Camillo - Forlanini, Medical Oncology/Pneumology, Roma, Italy; [4]Azienda Ospedaliera Perugia, Medical Oncology/Pneumology, Perugia, Italy; [5]Azienda Ospedaliera di Parma, Medical Oncology/Pneumology, Parma, Italy; [6]Spedali Civili di Brescia, Medical Oncology/Pneumology, Brescia, Italy; [7]Istituto Oncologico Veneto, Medical Oncology/Pneumology, Padova, Italy; [8]Az. Osp. Bianchi Melacrino Morelli, Medical Oncology/Pneumology, Reggio Calabria, Italy; [9]Ospedale Civile San Francesco di Paola, Medical Oncology/Pneumology, Paola Cosenza, Italy; [10]A.O.R.N. San Giuseppe Moscati, Medical Oncology/Pneumology, Avellino, Italy*

Background: Treatment options of locally advanced or metastatic non-small cell lung cancer (NSCLC) have substantially evolved during the last decade. The development of third-generation agents, such as vinorelbine or gemcitabine, has led to an improved therapeutic management of NSCLC, especially when tailored to patients' comorbidities and performance

status. Little is known about the actual approach in clinical practice in Italy. Therefore the aim of the present work is to describe first line pharmacological treatment (PT) choices in Italian routine clinical practice from the SUN (Survey on the Lung Cancer Management) study.
Materials and Methods: SUN is a 12-month longitudinal observational study aimed at enrolling patients aged ⩾18 years and newly diagnosed stage IIIB-IV NSCLC in 74 oncology/pneumological centers throughout Italy. Target therapy and chemotherapy (CT) were considered as possible PT choices. Survival was calculated from the baseline to death or censoring by means of Kaplan-Meier method application.
Results: A cohort of 1003 stage IIIB-IV NSCLC Italian patients was enrolled from January 2007 to January 2008 and followed-up for one year. Preliminary analyses show 6% of patients did not receive any pharmacological treatment at baseline, 12% started PT in clinical trial, 82% patients started 1st line PT according to routine clinical practice. Baseline features of patients starting 1st line PT according to routine clinical practice were: 37% aged ⩾ 70 yrs, 76% males, 82% current or previous smokers, 77% with PS. The median overall survival of patients starting 1st line PT according to routine clinical practice was 8.7 (95% CI 8.0−9.6) months. Median time to progression was 4.9 months (IQR: 3.0−7.6).
Conclusions: SUN preliminary results report almost all patients undergoing cancer treatment: combination CT represents the main therapeutic approach. Further analyses are ongoing as regards second and third line PT.
Study supported by Roche, Italy.

9035 POSTER

Positive urine cytology in patients with lung cancer without obvious urine tract metastases

G. Pentheroudakis[1], E. Voulgaris[1], L. Pappa[2], M. Mpafa[2], P. Dalezis[3], A. Papageorgiou[3], C. Tsombanidou[4], M. Koutsilieris[5], V. Malamou-Mitsi[2], N. Pavlidis[1]. *[1]Ioannina University Hospital, Department of Medical Oncology, Ioannina, Greece; [2]Ioannina University Hospital, Department of Pathology, Ioannina, Greece; [3]Theageneion Hospital, Department of Experimental Chemotherapy, Thessaloniki, Greece; [4]Theageneion Hospital, Department of Cytology Pathology, Thessaloniki, Greece; [5]Athens School of Medicine, Laboratory of Experimental Physiology, Athens, Greece*

Purpose: The presence of positive urine cytology in patients with lung cancer without obvious urine tract metastases is unexpected. Following our recent publication regarding the presence of the phenomenon in a small group of our patients, we decided to study our findings in a larger group of patients with early and metastatic lung cancer as well as 3 control groups. We also conducted an experimental study of the phenomenon.
Patients and Methods: Urine cytology of 150 patients with early and advanced/metastatic lung cancer were studied: 122 patients with non small cell lung cancer (stages I−III: 42 and stage IV: 80) and 28 with small cell lung cancer (extensive: 18 and limited: 12). The urine cytology of 15 patients with metastatic colorectal cancer, 15 with metastatic breast cancer and 15 with non Hodgkin's Lymphoma were used as control group. The experimental study of the phenomenon was conducted in BALB/C mice with the injection of 4?1 (breast) cancer cells and LLC (Lewis Lung Carcinoma) cells using a standardized protocol for the detection of cancer cells in urine as well as for the detection of renal and adrenal metastases.
Results: Among the 80 patients with metastatic NSCLC and the 16 with extensive SCLC, positive urine cytology was detected in 15% of them (12 with the former and 2 with later). None of these patients had radiological verification of metastasis to urinary tract. The morphological appearance of the cells coming from the biopsy and the urine cytology were identical. Urine cytology of the patients with non metastatic lung cancer as well as of those in the control group were negative. The experimental study revealed the presence of positive urine cytology in mice injected with LLC cells and negative for those injected with 4T1. No renal or adrenal metastases were found in mice.
Conclusions: The presence of positive urine cytology in patients with lung cancer without obvious urine tract metastases is a phenomenon first described by our study. Our study is ongoing in order to elucidate the possible mechanisms underlying this phenomenon and to collate these results with clinicopathologic tumor characteristics as well as their -if one- predictive and prognostic significance.

9036 POSTER

The correlation of serial pro-gastrin-releasing peptide and neuron specific enolase with radiological response and overall survival of patients with small-cell lung cancer

A. Ono[1], T. Naito[1], A. Tsuya[1], Y. Nakamura[1], H. Murakami[1], K. Kaira[1], T. Takahashi[1], I. Ito[2], M. Endo[3], N. Yamamoto[1]. *[1]Shizuoka Cancer Center, Division of Thoracic Oncology, Shizuoka-pref., Japan; [2]Shizuoka Cancer Center, Division of Pathology, Shizuoka-pref., Japan; [3]Shizuoka Cancer Center, Division of Diagnostic Radiology, Shizuoka-pref., Japan*

Background: Pro-gastrin-releasing peptide (ProGRP: P) and Neuron specific enolase (NSE: N) are specific serological markers in patients (pts) with small-cell lung cancer (SCLC). The aim of this study was to investigate whether decreasing rate (DR) of these tumor markers correlate with radiological response and prognosis in pts with SCLC.
Material and Methods: Out of 194 newly diagnosed SCLC pts from September 2002−April 2008 at our institution, we retrospectively reviewed consecutive 118 pts who had measurable lesions and elevated baseline levels of P and N before initial therapy (IT) including chemotherapy or chemoradiotherapy, and survived more than one month. P and N were measured on the first day of the every treatment course and after the final course of IT. Computed tomography (CT) was documented on baseline and every 2 courses of IT, and radiographic response was assessed by the New Response Evaluation Criteria in Solid Tumors (RECIST 1.1).
Results: 46 (38.9%) pts had limited stage disease (LD) and 72 (61.0%) pts had extensive stage disease (ED). Patients with partial or complete response (n = 89) had a better overall survival than those of stable or progressive disease (n = 23, Median survival time [MST]: 21 vs. 14.6 months, respectively; p = 0.04). Median DR of P and N after 2 courses were 87.1%, 77.8%, respectively at partial response group (n = 88). Both P and N levels at baseline were correlated with the sum of diameters (SOD) in baseline CT; Spearman's ρ was 0.42 (p < 0.001) and 0.48 (p < 0.0001), respectively. DR of P clearly correlated with DR of SOD after 2 courses, p = 0.50 (p < 0.0001) and after 4 courses, p = 0.42 (p < 0.0001). DR of N weakly correlated with DR of SOD after 4 courses, p = 0.27 (p = 0.005), but not after 2 courses, p = 0.22 (p = 0.27). In univariate analysis, 80% decrease of P after 2 courses was the strongest prognostic factor (MST: 27.1 [DR⩾80%] vs. 15.5 months [DR < 80%], p < 0.0001), but not in N (MST: 20.8 [DR⩾80%] vs. 20.7 months [DR < 80%], p = 0.92). In Cox's multivariate analysis, 80% decrease of P after 2 courses of the IT was significantly associated with prolonged survival, when adjusted by sex, age, PS, and disease extent (LD or ED), and radiographic response (p = 0.0018, hazard ratio: 0.11, 95% CI 0.028−0.43).
Conclusions: DR of P correlated with radiographic response stronger than DR of N, and 80% decrease of P after 2 courses of IT might be useful predictor for favorable prognosis of SCLC pts.

9037 POSTER

Vaccination with autologous dendritic cells pulsed with allogeneic tumour lysate in patients with advanced or metastatic non-small cell lung cancer (NSCLC)

L. Engell-Nørregård[1], P. Kvistborg[2], M.B. Zocca[2], A. Mellemgaard[1]. *[1]Herlev Hospital, Oncology, Herlev, Denmark; [2]Dandrit Biotech, Symbion, Copenhagen, Denmark*

Background: Metastatic non small cell lung cancer (NSCLC) has a poor prognosis and the effect of chemotherapy is limited. Therefore there is a need for new treatment options for this disease. Immunotherapy may represent one such option. Dendritic cell (DC) vaccination is a relatively nontoxic treatment which has been used in several solid tumors. In this study we examined the clinical and immunological response to intradermal administration DCs.
Materials and Methods: Monocyte derived autologous DC's were pulsed with allogeneic tumor lysate rich in cancer/testis antigens (MelCancerVac®). From February 2007, 22 patients received a total of 190 vaccines. Inclusion was closed in December 2008. The vaccine was combined with the administration of IL-2, imiquimod and celecoxib in order to facilitate response. The patients received 6 vaccines in 3 months followed by an evaluation CT scan. If there were no progression, booster vaccines were given on a monthly basis, until progression. Several factors such as clinical findings, CT, DTH, ELISpot and quality of life were evaluated in this single arm phase II trial. Here the clinical data is presented.
Results: The intention to treat population was 28 patients. All were previously treated with at least one line of chemotherapy. Six patients did not receive the first vaccine and 7 were excluded prior to the first evaluation scan (3 months). Out of 15 evaluable patients 8 was excluded due to progressive disease and 7 had stable disease according to RECIST criteria after 6 vaccines (3 months). Of these, 3 remained stable after 10 vaccines (6 months) and two of them are still stable after 32 and 18 vaccines (26 and