Conclusions: These results lead to presumption that the downregulation of CK8/18 expression in NSCLC could play a significant role on the disordered proliferation of tumour cells during neoplastic progression, while the expressionof CK19 might be not influential during the progression of the tumour. However, the prognostic significance of CK8/18 expression is required to keep further speculation.

9026 POSTER

The Risk of Lifelong DNA Damage Caused by Lung Cancer Among Rural Male Smokers Who Begin at Teenage

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Background: It is an established fact that tobacco is the major risk factor for lung cancer incidence. However, it affects more people in developing countries resulting to DNA damage.
Goals: To examine the effect of smoking on lung cancer risk and entire DNA damage in a relative large number of rural men, many of whom are poor and started smoking as teenagers.
Methods: We followed 50,232 men, ages 25 to 50 years, through a community-based tobacco control outreach program with questionnaires both in English and the local language to the North western and North eastern Nigerian Cohort Study in 2002/2003, through December 2007. We estimated relative risk (RR) of lung cancer associated with different measures of smoking initiation, duration, and intensity adjusting for confounding variables. We conducted analyses on the entire study population, among men who had smoked for at least 15 years, among non drinkers, and separately for each geo-political zone.
Results: Altogether, 10,240 men were diagnosed with lung cancer. Compared with never smokers, men who smoked for at least 15 years and who smoked 10 cigarettes or more daily had a higher RR. In contrast, men who had smoked for at least 15 years, but started after their 19th birthday, did not experience an increased lung cancer risk. The increased RR associated with smoking was observed among nondrinkers of alcohol, men with and without a family history of lung cancer in both geo-political zones in Nigeria.
Conclusion: Our results support the notion that men who start smoking as teenagers and continue to smoke for at least 15 years may increase their lung cancer risk with dramatic and lifelong DNA damage.
Tobacco killed one hundred million people in the 20th century, if nothing urgent is done to reduce tobacco use, it will kill 1 billion people this 21st century. There is need for countries who are already parties to the Framework Convention on Tobacco Control-FCTC to domesticate the laws in their respective countries.

9027 POSTER

Does the Timing of Additional Chemotherapy Affect the Outcome of Radical Surgery for Malignant Epithelioid Mesothelioma?

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Background: There is lack of evidence regarding the optimal timing of chemotherapy as part of multimodality treatment for malignant pleural mesothelioma (MPM). We aimed to examine whether timing of additional chemotherapy affects oncological outcome of radical surgery for MPM.
Material and Methods: From a prospective database we identified 154 patients with complete follow-up, referred from 40 hospitals, who underwent radical surgery as part of multi-modality treatment for epithelioid MPM in our centre in 11 years. No clear protocol existed for additional chemotherapy and the indication to start was left to the oncologist of the referring centre.

Chemotherapy	N	Survival [months] (excl 30 d mort)	Median FU [mo]	Median age [y]	% Male	% Stage III/IV	% EPP
Pre-operative	40	25 mo [15.4–34.6] (1 × 30 d mort)	20	59	83%	80%	70%
Early (<90d)	19	23 mo [19.9–26.1]	14	59	79%	79%	37%
Delayed	26	26 mo [14.2–37.8]	24	57	89%	76%	42%
None	69	14 mo [9.4–19.7] (7 × 30 d mort)	10	60	84%	89%	65%
Chemo vs no chemo p		**0.011**	NS	NS	NS	NS	**0.02**

Results: Out of 154 patients, 129 were Male, median age was 59 [14−75], 91 had extra pleural pneumonectomy (EPP) and 63 had lung sparing pleurectomy decortication (LSPD). The majority of the patients had stage IMIG III (58%) and IV (22%) disease.
40 Patients received preoperative chemotherapy, 19 early (<90d) and 26 delayed; 69 did not receive any chemotherapy. 85% Received platinum based therapy, in 50% in combination with Pemetrexed. Thirty-day mortality was 5.2%. Median follow up was 18 months [range 1−93]. Group characteristics are shown in the table. EPP represented the majority in the pre-operative and in the no-chemotherapy groups. LSPD patients received post-operative chemotherapy more often. Other characteristics did not differ significantly.
Significant survival benefit was found for patients who received additional chemotherapy compared to surgery alone ($p = 0.011$). Timing of this chemotherapy did not seem to influence this outcome ($p = 0.16$).
Out of 114 patients who did not receive pre-operative chemotherapy, only 45 (39%) have received chemotherapy post-operatively. A poor post-operative performance state or local treatment preferences in the referring centres are possible explanations for this finding.
Conclusions: Receiving chemotherapy is of significant influence on survival after surgery for MPM. Timing of this chemotherapy does not seem to affect the results. Administering chemotherapy pre-operatively might help to achieve a higher rate of completed chemotherapy courses.

9028 POSTER

Gemcitabine and Cisplatin Followed by Concurrent Gemcitabine and Radiotherapy or Sequential Radiotherapy Alone in Unresectable Stage III Non-small Cell Lung Cancer (NSCLC)

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Background: Gemcitabine is a radiosensitizer. It has been used to a limited extent in combination with radiotherapy in stage III NSCLC due to toxicity from full-dose gemcitabine with radiotherapy and due to high radiation volumes. A phase I study led to an optimal combination threshold (van Putten et al, Clin Cancer Res, 9:2003). The aim is to evaluate the outcome of concurrent and sequential chemoradiotherapy.
Methods: Patients with unresectable stage III NSCLC and a performance status WHO of 0- 2 were selected. Concurrent chemoradiotherapy consisted of 2 cycles of gemcitabine 1125 mg/m^2 on day 1 and 8 and cisplatin 80 mg/m^2 on day 1 of each 21-day cycle followed by weekly gemcitabine 300 mg/m^2 during 5 weeks of thoracic radiation (60 Gy). When the radiation field was considered too large or patients were too fragile, patients received sequential chemotherapy which consisted of 2−4 cycles of the same chemotherapy followed by 5 weeks of thoracic radiation alone (60 Gy).
Results: Between March 1999 and August 2008 283 consecutive patients were treated, 135 patients received concurrent chemoradiation and 148 received sequential chemoradiation. For the concurrent group median age was 63 (range 35−86); male/female ratio was 73%/27%; WHO performance status 0/1/2/missing was 46%/51%/3%. Median progression-free survival (PFS) was 13 months (95% CI, 10−16) and median overall survival was 23 months (95% CI, 17−29). For the sequential group median PFS was 11 months (95% CI, 8−14) and median overall survival was 16 months (95% CI, 13−19).
Conclusion: Concurrent chemoradiotherapy with gemcitabine as radiosensitizer gives comparable results as reported for high-dose chemoradiotherapy regimens. Nearly half of patients were not fit enough to be treated with concurrent chemoradiotherapy schedules.

9029 POSTER

Where Do We Stand in the Multidisciplinary Approach to Non-small Cell Lung Cancer (NSCLC) − a Retrospective Single Institution Experience From Rural India

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Background: Lung cancer is the leading cause of cancer-related death in men and women in the world. Numerous validated prognostic factors have been established which relate to survival outcomes in non small cell lung (NSCLC) cancer. However, in regions with limited resources there are other factors besides conventional ones which prognosticate the treatment. To better understand the demographic profile, treatment parameters and tumour response in such constrained environment like ours, we conducted this retrospective study.
Materials & Methods: From June 2009 through April 2011, 73 diagnosed NSCLC patients were included in this study. The patient, tumour-related and treatment related factors were analyzed. Median overall survival (OS), Kaplan–Meier survival plots, T-test, Cox Proportional Hazards models were

generated by multiple covariates and analysed on SPSS software (version 15.0; SPSS, Inc., Chicago, IL).
Results: Median age of the cohort was 60 years (range, 35−85) where 65(89%) were male, with 11 (15.1%) patients having SVCO at presentation. Karnofsky performance score (KPS) of <70 was seen in 22 (30.1%) patients at the time of registration. Squamous histology was seen in 16 (22%) while non squamous was established in 67 (78.1%) patients. Complete AJCC staging work up revealed stage II A (1 patient, 1.4%), II B (1, 1.4%), III A (21, 28.8%), III B (18, 24.7%) and IV (32, 43.8%). At presentation bone metastasis was seen in 16 (22%), and visceral metastasis in 9 (12.4%) patients. Upfront chemotherapy was infused in 50 (68.5%) patients while 73 (100%) received adjuvant radical radiation therapy to the primary lesion. None of the patients received any curative or palliative surgical intervention. Median OS of the population was 5 months (range,0−28 mths). Amongst the multiple covariates tested like age, sex, KPS, histology, AJCC stage, chemotherapy and radiation therapy parameters, only factors related to chemotherapy had shown a significant relation to OS. Superior median survival was seen in patients who received chemotherapy than otherwise (8.02±5.24 mths vs. 3.74±5.21 mths, p = 0.03). Partial responders to chemotherapy had better survival outcome than those with progressive disease during the course of chemotherapy ((9.45±5.4 mths vs.5.56±5.4 mths, p = 0.02).
Conclusions: Role of chemotherapy is well evident in the overall dismal outcome of lung cancer in our study. However, factors like patient preference and financial constraints do have an indirect effect in our set up on the application of chemotherapy. Similar effect is reflected for adoption of radical surgical approach which is glaringly lacking. Additionally, advanced stage presentation could be seen as a probable failure of adequate screening and early diagnosis. Overall, the concept of multidisciplinary approach towards lung cancer management needs to be rigidly followed.

9030 POSTER

An Expression Profile Classifies Early Stage Non-small Cell Lung Cancer Into Two Groups With Good and Poor Disease-free Survival Rates

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Introduction: In Spain, 20,000 new cases diagnosed annually of lung cancer. In this disease, the overall survival rate at 5 years is 14%. Of all patients diagnosed in early stages (I and II), 25−30% develop recurrence within 5 years. The aim of our study was to identify molecular subgroups with poor prognosis using gene expression profiles.
Materials and Methods: 84 surgically resected cases (with mediastinal lymph node dissection and negative margins) of stage I (n = 60) or II (n = 24) NSCLC from our institution (40 squamous cell carcinoma (SCC), 39 adenocarcinomas, 3 adenosquamous and 2 large cell), without previous tumours and without neoadjuvant or adjuvant therapy. Recurrence rate was 34.5%. RNA was extracted from frozen samples with more than 70% tumour cells. Tumours were analyzed using microarray expression 4x44 K (Agilent). The data were normalized (LOWESS) and subjected to unsupervised analysis (clustering and k-means) to classify samples based on expression profiles. The association of identified molecular subgroups with clinicopathological (age, sex, smoking, stage, differentiation, inflammation, . . .), molecular variables (mutations of EGFR, k-Ras and B-Raf) and disease free survival (DFS) was analyzed. An external dataset was used to validate our molecular classification.
Results: In our series, neither the histological subtype nor tumour stage was associated with DFS. We have identified two molecular subgroups of NSCLC whose Kaplan–Meier curves show a statistically significant association with DFS (Log-rank test p = 0.004). The better prognosis subgroup includes one third of patients with both adenocarcinomas and SCC, stage I and II. Moreover, pathway analysis points out to a key role of the immune system in the prognosis value of molecular groups. A predictor was obtained to classify samples into low and high risk groups. Prognostic value of the classifier was validated in an external series of 162 patients (p = 0.001). Predictor was associated with DFS independently of the stage.
Conclusions: In our series, classical histopathological subtypes and tumour stage did not show statistical significant associations with DFS while our expression profile subtypes did. This association was confirmed in an external dataset. This classification could allow selecting patients at low risk of recurrence of patients who may require adjuvant treatment in addition to surgery.

9031 POSTER

Does the "Two Week-Wait" Target Improve Survival in Patients With Lung Cancer in the UK?

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Backround: Incidence and mortality rates for men have fallen sharply since peaking in 1974. Incidence of lung cancer has risen by 76 per cent for women between 1971 and 2000, while mortality rates are falling slightly after peaking in 1994. Lung cancer 5-year survival rates are poor and have been largely static over time. Cancer waiting time targets were introduced to monitor service performance via process improvement. The intention was to improve the outcome (survival) of the disease. The aim of the study was to assess whether the "two week-wait" target can improve survival in patients with lung cancer.
Materials and Methods: 753 patients were diagnosed with lung cancer between January 2002 and December 2006. Data were retrospectively collected from the cancer database at Queen Elizabeth Hospital, London. Survival was compared in patients that were referred via the "two week-wait" rule (Group 1) and those not referred via this pathway (Group 2).
Results: Only 27% of patients were referred under the "two week-wait" rule and of the remainder a significant proportion came from the Accident & Emergency (A&E) or referred from other specialities (221 and 188 patients respectively).
Kaplan–Meier comparison showed survival to be 16% for Group 1 and 9% for Group 2.
The mean survival for lung cancer patients referred via the "two week-wait" route is 0.82 years (301 days, 95% confidence interval, 246–356 days) and the same for patients referred via non two-week route which was 0.41 years (134 days, 95% confidence interval 108–260 days), (p value $\leqslant$0.005).
Conclusions: The "two week-wait" rule significantly improves the survival in patients with lung cancer. However the underutilisation of two week route cannot be ignored as an unacceptably high percentage of lung cancer patients come via A&E (40%) and other specialities (36%).

9032 POSTER

A Feasibility Study of Induction Pemetrexed Plus Cisplatin Followed by Extrapleural Pneumonectomy (EPP) and Postoperative Hemithoracic Radiation (H-RT) for Malignant Pleural Mesothelioma (MPM) − First All Japan Trial

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Background: Feasibility and efficacy of trimodality therapy for MPM is still under controversy mainly due to the lack of clinical evidence. In this context, a prospective multi-institutional study has been planned to evaluate the feasibility of trimodality therapy for MPM with support by the Special Coordination Funds for Promoting Science and Technology from the Japanese Ministry of Education, Culture, Sports, Science and Technology.
Methods: Eligibility criteria: a histologically confirmed diagnosis of MPM, including all subtypes clinical T0−3, N0−2, M0 disease considered to be completely resectable; no prior treatment with chemotherapy, surgery or radiotherapy for the disease; age between 20 and 75 years; ECOG performance status of 0 or 1; a predicted postoperative forced expiratory volume in 1 s of >1000 ml; adequate bone marrow, hepatic, renal, cardiac and respiratory functions; a life expectancy of >12 weeks; and written informed consent. Treatment methods: Induction chemotherapy of pemetrexed 500 mg/m^2 plus cisplatin 60 mg/m^2 with vitamin supplementation for 3 cycles, followed by EPP and postoperative H-RT (54 Gy). Primary endpoints: macroscopic complete resection rate by EPP and treatment-related mortality for trimodality therapy.
Results: A total of 17 institutions in Japan with certified specialists in oncology, surgery and radiation therapy participated in this trial. The study was initiated in May 2008 and patient enrollment was completed in November 2010 with 42 eligible patients. Median age 64.5 (range 43−74), M: F = 39:3, Clinical stage I:II:III = 14:13:15, Histological type epithelial: sarcomatous; biphasic; others = 28: 1: 9: 4. Of 42, 33 patients underwent surgery. Three patients received thoracotomy only due to extensive disease, and macroscopic complete resection with EPP was achieved in 30 patients (71% of ITT).