Conclusion: Overall, Our findings suggest that catechin hydrate inhibits B(a)P-induced lung tumor formation by modulating hyperproliferation, inflammation, apoptosis and ALDH1 expression.

Keywords: Catechin hydrate, aldehyde dehydrogenase 1, carcinoembryonic antigen, chemoprevention

P1.01-021

The Impact of Smoking Status on Overall Survival in a Population-Based Non-Small Cell Lung Cancer (NSCLC) Surgical Resection Cohort



Topic: Protective Factors, Risk Reduction, Smoking Cessation

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Background: Surgical resection is the optimal treatment modality for NSCLC, while smoking has been shown to have a negative survival impact. We evaluated smoking's impact on overall survival within a population-based cohort of patients with surgicallyresected NSCLC.

Methods: We examined all patients who had a curativeintent NSCLC resection from 2009-2016 in 4 contiguous Dartmouth Hospital Referral Regions of the US. We compared patient and clinical characteristics among never, former (stopped ≥ 1 year prior), and active smokers using the Chi-square and ANOVA tests. Survival analyses were conducted with the Kaplan-Meier method and Cox Proportional Hazards models.

Results: Of 2,202 patients, 206 (9%) were never, 846 (38%) were former, and 1,150 (52%) were active smokers. Significant demographic and clinical differences between cohorts included age, sex, race, insurance, comorbidities, pulmonary function, method of detection, ASA status, extent, primary site and length of resection, histology, and histologic grade (all $p \le 0.05$). Short-term post-operative mortality (at 30-, 60-, 90-, 120-days) rates for never smokers were 1%, 2%, 4%, 4%; for active smokers, 4%, 6%, 7% and 8%; and for former smokers,

5%, 7%, 9%, and 11%; and differed significantly by smoking status (p=0.0539, p=0.0316, p=0.0187, p=0.0017). At 5 years, overall survival was 69% for never smokers, 55% for active, and 49% for former smokers (p=0.0002) (Figure 1). Controlling for age, sex, race, insurance, histologic grade, extent of resection, and length of surgery, and compared with never smokers, active smokers had 1.3 times (p=0.05) the hazard of death and former smokers had 1.4 times the hazard of death (p=0.04).





Conclusion: In this population-based cohort, smoking is negatively associated with post-operative mortality and long-term overall patient survival; although active smokers had better survival outcomes than former smokers.

Keywords: non-small cell lung cancer, Surgical resection, survival, tobacco control and cessation

P1.01-022 Smoking Cessation Related to Lung Resection



Topic: Protective Factors, Risk Reduction, Smoking Cessation

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Background: Smoking cessation interventions are often ineffective, although negative health effects of smoking

are well established. However, evidence suggests that diagnosis of a severe medical condition or a surgical intervention may force people to quit smoking without any counseling. Aim of this study was to determine the smoking cessation rate among patients undergoing lung resection and factors associated with perioperative smoking cessation.

Methods: All lung resection patients in one thoracic surgery department in 6 years were included. A phone-interview was conducted with all (accessible) patients aged \geq 16. Wilcoxon rank-sum test, and chi-squared or Fisher exact test were used for statistical analysis.

Results: In 6 years 970 patients were operated on; 406 (229 male, 177 female; mean age 56.4 [range 16 to 85] years) were available for the study. At the time of surgery 155 patients (38.2%) were non-smokers, 82 (20.2%) ex-smokers, and 169 (41.6%) current smokers. 56.3% of males and 22.6% of females were smokers (p<0.0001). 145 patients had lung cancer and 261 patients other causes for lung resection, with different smoking distribution in these 2 groups (p < 0.0001). Sixty nine patients (40.8%) quit smoking before the operation: 22 due to the planned operation, 23 due to the newly diagnosed disease, and 24 for other reasons. Seventy two patients (42.6%) did not smoke after hospital discharge including 66 (39.1%) also a year later. An additional 40 (23.7%) patients had tried to stop, and 57 (33.7%) continued smoking. The quit rate was higher among lung cancer patients versus others (uncorrected p=0.007), and patients operated through thoracotomy versus VATS (uncorrected p=0.0295); and was not influenced by age, gender or duration of smoking before quitting.

Conclusion: Almost 40% of patients undergoing lung resection stopped smoking without special counseling, with very few restarting. Smoking cessation rate was higher among patients with lung cancer and patients operated through thoracotomy.

Keywords: Smoking Cessation, Thoracic Surgery

P1.01-023

Smoking Cessation before Initiation of Chemotherapy in Metastatic Non-Small Lung Cancer: Influence on Prognosis



<u>Ana Linhas</u>, Sérgio Campainha, Sara Conde, Ana Barroso Centro Hospitalar Vila Nova de Gaia/ espinho, Vila Nova de Gaia/Portugal **Background:** The association between cigarette smoking and lung cancer mortality is well known. Some studies have shown a decreased overall survival (OS) in early stage non-small cell carcinoma (NSCLC) patients that continue to smoke after diagnosis. It is documented that in patients with metastatic disease, continued smoking increases resistance to systemic therapies but the impact of smoking cessation during treatment on outcomes for these patients is not well defined. Objective: To evaluate the impact of smoking cessation, before initiation of chemotherapy (CT), on survival in advanced NSCLC.

Methods: Patients referred to our center, between January 2010 and June 2016, and diagnosed with metastatic NSCLC were analyzed. Patients defined as smokers at diagnosis and treated with at least one cycle of chemotherapy were included. Clinical characteristics and survival outcome were reviewed and compared between patients who quit smoke before and after the initiation of chemotherapy.

Results: A total of 113 patients were included [mean age 59±10 years; 89.4% (n=101)]. The histological type more predominant was adenocarcinoma (70.8%) and the most common sites of metastasis were lung, bone and brain (35.4%, 23.9% and 23%, respectively). The majority of patients had performance status 1 and no weight loss at time of diagnosis (53.1% and 58.4%, respectively) and the comorbidity most prevalent was hypertension (19.5%). The average number of cigarettes smoked was 51±23pack-years and 81.4% of patients smoked >30 pack-years. The most used CT regimen was platinum combined with pemetrexed (63.7%). Patients who quit smoking before CT showed a better median OS although not statistical significant (8 vs. 7 months; p=0.478). This was also seen in heavy smokers \geq 30 pack-years, with a median OS of 8 vs. 6.5 months (p=0.674). The multivariate analysis only showed an influence of type of CT on survival.

Conclusion: Although not significant differences in OS between groups were observed in our sample, the median survival was better in patients that quit smoking before the initiation of CT, even in heavy smokers. Continued smoking after CT initiation is known to adversely affect treatment response and quality of life and efforts to encourage smoking cessation even among this population of patients should be made.

Keywords: advanced NSCLC, Smoking Cessation, chemotherapy, survival