

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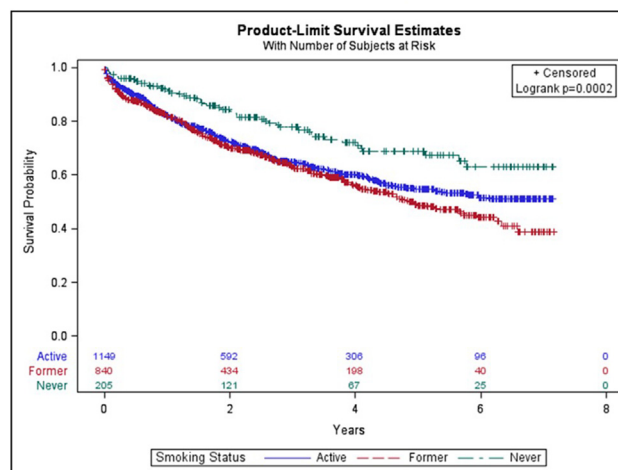
**Background:** Surgical resection is the optimal treatment modality for NSCLC, while smoking has been shown to have a negative survival impact. We evaluated smoking's impact on overall survival within a population-based cohort of patients with surgically-resected NSCLC.

**Methods:** We examined all patients who had a curative-intent 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  $\geq 1$  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  $p \leq 0.05$ ). 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 ( $p=0.04$ ).

Figure 1. Overall Survival by Smoking Cohort



**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

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## 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