

## Diabetes and mortality in the National Lung Screening Trial

Sunday 1:00-1:30 PM | CH241-SD-SUB1 | CH Community, Learning Center Station #1

### PURPOSE

Presence of diabetes increases mortality, but extent to which diabetes increases lung and other cancer mortality among heavy smokers is unclear. We examined the risk for all-cause, lung cancer and non-lung cancer mortality among people with vs without diabetes followed in the National Lung Screening Trial (NLST) cohort.

### METHOD AND MATERIALS

There were 53,212 participants enrolled in the NLST trial, and 5,174 reported having diabetes at screening. Over the course of the study, there were 3,936 total deaths, 1,021 from lung cancer and 826 non-lung cancer. Cox proportional hazards regression models were used to examine the relative risk for overall, lung cancer and non-lung cancer mortality associated with diabetes, adjusted for age, gender, randomization group and covariates of interest (body mass index [BMI] and pack-years of smoking).

### RESULTS

Subjects with diabetes were older ( $62 \pm 5$  vs.  $61 \pm 5$  years,  $p < 0.0001$ ), reported more pack-years of smoking ( $62 \pm 29$  vs.  $55 \pm 23$ ,  $p < 0.001$ ), and had higher BMI ( $31.1 \pm 5.8$  vs  $27.6 \pm 4.9$ ,  $p < 0.0001$ ) than people without diabetes at screening. There were 650 deaths (12.6%) among participants with diabetes, vs 3,286 deaths (6.8%) among non-diabetic subjects ( $p < 0.0001$ ). In cox proportional hazards models, diabetes was associated with an increased risk for all-cause mortality (RR=2.2, 95% CI 1.8-2.6,  $p < 0.0001$ ), lung cancer mortality (RR=1.8, 95% CI 1.3-2.5,  $p = 0.0008$ ) and non-lung cancer mortality (RR 1.6, 95% CI 1.04- 2.3,  $p = 0.03$ ) in women. Among men, diabetes increased the risk only for all-cause (RR=1.7, 95% CI 1.5- 1.9,  $p < 0.0001$ ) and non-lung cancer mortality (RR=1.68 (95% CI 1.3-2.0,  $p < 0.0001$ ), but not lung cancer (RR=1.1, 95% CI 0.8-1.4,  $p = 0.63$ ).

### CONCLUSION

Diabetes increases the risk of death from all causes and non-lung cancer deaths among heavy smokers, and increases the risk for lung cancer mortality in women.

### CLINICAL RELEVANCE/APPLICATION

Heavy smokers with diabetes are at increased risk for mortality from cancer at sites other than the lung in men and both lung and non-lung cancers in women compared to non-diabetic subjects.