

## **Mortality for Lung Cancer among PVC Baggers Employed in the Vinyl Chloride Industry**

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### **OBJECTIVES**

Vinyl-chloride monomer (VCM) is classified as a known carcinogen of the liver; for lung cancer, some results suggest a potential association with polyvinyl chloride (PVC) dust. We evaluated the relationship between lung cancer mortality and exposure as PVC baggers in a cohort of workers involved in VCM production and polymerization in Porto Marghera (Venice, Italy) considering both employment status and smoking habits.

### **METHODS**

The workers were studied between 1973 and 2017. A subset of them (848 over 1658) was interviewed in the 2000s to collect information about smoking habits and alcohol consumption. Missing values were imputed by the Multivariate Imputation by Chained Equations (MICE) algorithm. We calculated standardized mortality ratios (SMR) and 95% confidence intervals (95% CIs) using regional reference rates by task (never, ever, and exclusively baggers) and by smoking habits. Mortality rate ratios (MRR), adjusted for age, calendar time, time since first exposure, and smoking habits, were obtained via Poisson regression using Rubin's rule to combine results from imputed datasets calculating the fraction of information due to non-response.

### **RESULTS**

Lung cancer mortality was lower than the regional reference in the whole cohort (lung cancer SMR = 0.92; 95% CI 0.75-1.11). PVC baggers showed a 50% increase in lung cancer mortality compared to regional rates (SMR = 1.48; 95% CI 0.82-2.68). In the cohort analyses, a doubled risk of lung cancer mortality among PVC baggers was confirmed after adjustment for smoking and time-dependent covariates (MRR = 1.99, 95% CI 1.04-3.81).

### **CONCLUSIONS**

Exposure to PVC dust resulting from activity as bagger in a polymerization PVC plant was associated with an increase in lung cancer mortality risk after adjustment for smoking habits.

**FULL TEXT PER GLI UTENTI REGISTRATI ALLA RIVISTA**

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9141742/>