

OCCUPATIONAL EXPOSURE AND LUNG CANCER IN WORKERS AFFILIATED TO THE MEXICAN INSTITUTE OF SOCIAL SECURITY (IMSS)

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Introduction: In Mexico, prevalence records of workers' neoplasms are not available. Although some authors declare that occupational exposures represent 1 to 8% of total neoplasms; in Mexico, according to IMSS' statistics, reports of occupational lung cancer have been scarce. The aim of this study was to assess the risk of having lung cancer related to occupational exposure to chemical agents in workers affiliated to IMSS.

Methods: In a case-control study, 90 cases and 89 controls, recruited from 2 high specialty hospitals, were interviewed. Cases included workers with histologically confirmed lung cancer; controls were healthy workers selected randomly from registries of IMSS affiliated population. Data were collected by questionnaires to obtain information on occupation, exposures, and smoking history. Exposure was estimated by self report and by a job-task exposure matrix created by an occupational physician. The exposures considered included polycyclic aromatic hydrocarbons (PAH's), pesticides, heavy metals and inorganic particles in four different periods: 5, 10, 15 and more than 15 years previous to diagnosis. Odds ratios were calculated with logistic regression analysis and adjusted for sex, age, smoking history, family history of cancer and education level.

Results: Elevated OR's for PAH's in all periods (4.01, 95% CI 1.83, 8.77; 3.75, 95% CI 1.68, 8.36; 4.19, 95% CI 1.73, 10.12; 13.01, 95% CI 4.89, 34.62 respectively), heavy metals in the first and fourth periods (15.00, 95% CI 1.85, 121.87; 4.94, 95% CI 1.40, 17.50 respectively) and inorganic particles in the fourth period (3.41, 95% CI 1.10, 10.60) were found. However, after adjusting for the control variables previously mentioned, only the exposure to PAH's in the first period was found significantly associated with lung cancer (OR = 13.7; 95% CI 2.9, 64.2).

Exposure	Odds Ratios (OR) and Confidence Intervals (IC 95%)			
	Period			
	1	2	3	4
HAP's	4.01 IC95% 1.84, 8.77	3.75 IC95% 1.68, 8.36	4.19 IC95% 1.73, 10.13	13.01 IC95% 4.89, 34.62
Pesticides	2.93 IC95% 0.26, 33.08	1.91 IC95% 0.17, 21.59	2.20 IC95% 0.22, 21.72	2.36 IC95% 0.64, 8.73
Hard Metals	15.00 IC95% 1.85, 121.87	1.36 IC95% 0.41, 4.50	3.53 IC95% 0.73, 17.06	4.95 IC95% 1.40, 17.50
Inorganic Particles	2.49 IC95% 0.77, 8.03	1.80 IC95% 0.57, 5.68	1.70 IC95% 0.49, 5.83	3.41 IC95% 1.10, 10.60

Conclusion: This study showed a significant excess risk of lung cancer among workers exposed to PAH's five years previous to diagnosis. This risk was independent of sex, age, smoking, family history of cancer and education level. Some of our a priori hypotheses were not confirmed, possibly because of exposure misclassification or low statistical power.