Abstract Group: 11.1. Lung Cancer

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Title: Lung cancer cases in clean-up workers of Chernobyl NPP accident

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Body: The purpose of the study was to analyze Lung Cancer (LC) cases in cohort of clean-up workers of Chernobyl Nuclear Power Plant (ChNPP) accident (1986). Methods: The Analysis of database which includes 7156 clean-up workers (6257 (87.4%) men and 899 (12.6%) women) of ChNPP accident in comparing with Cancer Registry of Ukraine was provided. The total found of 50 (0.70%) lung cancer (LC) cases in a cohort were analyzed. The probable risk factors of LC were analyzed in the named cohort of clean-up workers: age at the diagnosis of LC, age at the time of participation in the accident, anamnesis of bronchopulmonary diseases, dose of ionizing radiation, smoking. Results: Age of patients at time of LC diagnosis ranged from 44 to 80 years and averaged 59.56 ± 1.22 years. There was a clear relationship between the age of patients at LC diagnosis and the age at the time of the Chernobyl accident (r = 0.88; p = 0.0001). The average age at the time of the accident was significantly higher in those who emerged LC (43.0 ± 1.12 years, p = 0.001). Among clean-up workers suffered with LC significantly more often different bronchopulmonary diseases especially COPD were found (72% and 47.01%, respectively, p = 0.001). Only 6 of 50 patients with LC never smoked, compared with 1439 (34.04%), without LC (p = 0.001). The risk of LC for smokers was 3.785 (95% CI 1.609 - 8.903). Doses of radiation exposure were higher in clean-up workers with LC, then in those without LC (36.87 + 9.08 sSv and 20.42 + 0.56 sSv, accordingly). Conclusion: Risk factors for LC in clean-up workers of ChNPP accident were radiation exposure more than 50 sSv, chronic diseases of bronchopulmonary system, smoking and interaction of these factors.