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Title: Frequency of pulmonary hypertension in patients with COPD - Clean-up workers of Chernobyl catastrophe

Dr. Olena 33060 Apostolova evapos@ukr.net MD ¹, Prof. Dr Viktor 33061 Sushko pulmorad@gmail.com MD ¹ and Dr. Olga 33062 Tatarenko olga.tatarenko@mail.ru MD ¹. ¹ Department of Pulmonology, SI "Natal Research Center for Radiation Medicine of NAMS of Ukraine", Kyiv, Ukraine, 03115 .

Body: Aim: The aim of the study was designed to investigate the pulmonary hypertension (PH) frequency and its relations in COPD patients - clean-up workers of the Chernobyl catastrophe (ChC) and comparable group of COPD patients that have not undergone radiation exposure. Methods and Results: The study was a retrospective review of patients with COPD defined as a smoking history, Pulmonary function tests (PFT) and echocardiogram within stable status. PH was defined as systolic pulmonary artery pressure >35 mmHg. The main study group were patients with COPD – 248 clean-up workers of ChC in 1986 (doses ranged from 250 to 750 mSv). Age of main group of patients was (59.8 ± 1.4) years. Comparison group - 234 patients with COPD who were not undergone to radiation exposure (age - (63.5 ± 2.9) years). Only males were included into the study. The prevalence of PH was found more frequent in main group. It was more prominent in moderate level COPD cases (56,7% and 37,3%, p<0.001). Both groups had airflow limitation, hypercapnia and hypoxemia, but no differences were found in terms of PaCO₂ and PaO₂. However, FEV₁ % was lower in COPD patients clean-up workers of ChC compared with the nonirradiated patients (p<0,005). Conclusion: The study demonstrated that PH frequency is higher in group of COPD patients clean-up workers of ChC than in patients with COPD who were not undergone to radiation exposure. The influence of FVC % on the risk of a person having PH increased with increasing COPD level.