Title: Scintigraphic parameters in COPD patients

Body: Aim: to study the ventilation-perfusion ratio (V/Q), apex-base gradient of ventilation (U/L-V) and perfusion (U/LQ) and alveolar-capillary permeability (ACP) in stage I-II COPD patients on the basis of scintigraphy data. Materials and methods: 35 people aged 38.4 (31.5-45.3) took part in the study: patients diagnosed with COPD (25) and healthy smoking volunteers (10). The scintigraphic studies were performed by means of Omega 500 gamma camera (Technicare, USA-Germany). The subject of the research was an examination of ACP in the right (RL) and left (LL) lungs in the process of radiopharmaceutical derivation, static conditions, during the 1st, 10th and 30th min after 99mTc DTPA inhalation. Results: COPD patients: V/Q in both RL and LL was not higher than 1.0 and amounted to 0.9 (0.7-1.2) in the RL and 0.9 (0.8-1.0) in the LL. These parameters did not differ from those of healthy volunteers (p=0.78 and p=0.55). U/L-V amounted to 0.6 (0.5-0.8) in the RL and 0.6 (0.4-0.9) in the LL. It was lower than that of healthy people (p=0.23 and 0.47). U/LQ amounted to 1.0 (0.8-1.1) in the RL and 0.9 (0.8-1.1) in the LL. This parameter was higher than that of healthy people (p=0.005, p=0.01). ACP in the RL amounted to 10.5% (10.2-10.9%) and 21.4% (19.8-22.9%) during the 10th and 30th minutes of the study, respectively; it was slowed down during the 10th and 30th minutes (p=0.002 and p=0.001). ACP in the LL amounted to 11.3% (10.1-12.5%) and 23.5% (22.3-24.8%) during the 10th and 30th minutes of the study, respectively; it was slowed down during the 10th and 30th minutes of the study (p=0.001 and p=0.001). Conclusions: The study findings may serve as additional scintigraphic criteria for COPD diagnostics.