

# Clinical, functional and imaging parallels in the objective status of patients after community-acquired COVID-19-associated pneumonia

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**Conflict of interest:** none

**OBJECTIVE.** To determine the dynamics of clinical symptoms in patients with community-acquired COVID-19-associated pneumonia, imaging and functional examination methods in the early post-acute period of the disease, establishing clinical, functional and imaging parallels in the objective status of patients.

**MATERIALS AND METHODS.** We examined 56 patients after coronavirus disease (COVID-19). The severity of dyspnoea, anamnesis, objective status, pulse oximetry, lung ultrasound (LUS), computed tomography (CT) data, spirometry, body plethysmography, lung diffusion capacity were assessed. Non-parametric methods were used.

**RESULTS AND DISCUSSION.** According to LUS 6 (10.7 %) patients had no pathological changes. Other patients had changes ranging from 3 to 11 points; 24 (48.0 %) had mild interstitial lung lesions, other – moderate. Every second patients showed signs of interstitial inflammation (single, multifocal, confluent B-lines), no more than three segments. Almost all patients (98.0 %) had single A-lines. LUSS was “recruited” mainly due to the LUS-pattern of consolidation (76.0 %) or thickened/uneven pleura (90.0 %). The area of lung lesions on CT correlated with LUS ( $r=0.79$ ;  $p<0.001$ ). Forced vital capacity correlated with LUS ( $r=-0.42$ ;  $p<0.001$ ).

**CONCLUSIONS.** LUS is a highly sensitive method for visualising interstitial changes in the lungs in the post-acute period after COVID-19-associated pneumonia. Most often, there are no impairments in lung ventilation function, but about 20 % of patients require further examination.

**KEY WORDS:** outcomes of community-acquired COVID-19-associated pneumonia, high-resolution chest computed tomography, lung ultrasound, computerised spirometry, body plethysmography, lung diffusion capacity (DLco).