Dalimov A.A.
Andijan State Medical Institute, Republic of Uzbekistan

PREDICTOR VALUE OF THE RISK ASSESSMENT SCALE FOR POSTCOID INTERSTITIAL LUNG DISEASE

Introduction. As data have emerged on the occurrence of postcochlear fibrosis, a number of putative predictors have been identified. These include advanced age, severe illness, prolonged ICU/hospital stay and mechanical ventilation, smoking history, and chronic alcoholism. The severity of lung injury and inflammatory response are known to be related to the extent of the fibroblastic response required to repair the damage. Higher levels of CRP (C-reactive protein) and IL-6 (interleukin) during disease may lead to fibrosis during recovery.

Study Objective: To investigate the predictive value of the risk assessment scale for post-cocclusive interstitial lung disease.

Materials and methods of the study. The study included 102 patients, who underwent COVID-19 associated pneumonia with lesions of at least 50% of the lung parenchyma, discharged from the infectious hospital, for 2 months underwent rehabilitation, including individually selected program of physical therapy, including breathing exercises and regular dynamic exercises, as well as oxygen therapy for resting saturation below 90% for 2-6 hours a day.

Study Results. Given the pandemic nature of SARS-CoV2 infection, the study investigated the possibility of using ultrasound (lung ultrasound) to predict and dynamically monitor the fibrous transformation of the pulmonary parenchyma. Based on the developed risk assessment scale for post-infection interstitial lung disease, we undertook a study of prognostic efficiency of the scale, in which the criterion "volume of the affected pulmonary parenchyma at the end of the infection period according to the results of MSCT (multislice computed tomography) of the chest" was replaced by the score of pulmonary parenchyma compaction by ultrasound at the same time point. Fifty-seven patients out of 102 (55.88%) had a score of 2 or 3 according to this scale. Of these, 52 patients (91.23%) developed postcocclusive pulmonary fibrosis; the remaining 45 patients developed fibrosis in 9 patients (20%, chi square =53.05, $p<0.001$).

Thus, the relative risk of developing interstitial lung disease in patients with a score of 2 or more was 4.56, compared with patients with a score of less than 2. The sensitivity of the presented scale was lower than that of the MSCT scale and was 85.25%, in contrast, the specificity was higher and was 87.80%, and the prognostic efficiency was 86.27%, which was lower than that of the chest MSCT scale. To compare the two scales, we calculated the area under the ROC curve, which is calculated using true positive probability (sensitivity, expressed in fractions of a unit) and false positive probability (1-specificity, expressed in fractions of a unit).

Conclusions. Thus, the present study showed that in COVID-19 postinfection period ultrasonography can be used for prognosis and dynamic monitoring of interstitial lung disease development, adequately replacing serial chest MSCT examination. Ultrasound use is informative, affordable, cost-effective, technically simple and allows to significantly reduce technical and financial burden on health care system**.**