

SEVERE COVID-19: A CROSS-SECTION REVIEW OF DATA FROM FIRST TWO YEARS OF PANDEMIC

O. K. Yakovenko, L. M. Dzhumaniuk, O. G. Hanin

Abstract

Aim: to study demographic, clinical, laboratory and radiological features of severe COVID-19 in hospitalized patients for 2020-2021 years.

Materials and methods. This was a retrospective cohort study among severe COVID-19 adult (≥ 18 years) patients, admitted to Volyn Regional Hospital # 2 during 2020 (discharged with improvement ($n = 101$) or deceased ($n = 70$)) and 2021 (discharged with improvement ($n = 156$) or deceased ($n = 112$)). Only severe COVID-19 patients (WHO score 6 or higher) were enrolled. Several parameters were assessed: demography, concomitant conditions, time to hospital admission, duration of hospital stay, vital signs and body temperature curve, oxygen saturation, laboratory and computed tomography (CT) data, effect of several treatment modalities and even lung histology findings. Statistical analysis was done using IBM SPSS Statistics 26 software.

Results and discussion. Lethality index in 2020 was 9,66 % ($n = 70$), in 2021 — 11,6 % ($n = 112$) with no difference between severely ill patients subgroup. For both study years the mean age of deceased patients was higher than in cured patients. Time period to hospital admission was longer in 2020, which in combination with lower mean oxygen saturation (88 % vs 81 %) value suggest later referral in 2020 than in 2021.

Blood creatinine and glucose values were not associated with higher mortality. In severe COVID-19 patients, admitted in 2021, the most common CT patterns were diffused parenchymal lesions — 63,3 % vs 39 % in 2020 ($p < 0,05$) and diffused alveolar hemorrhage with capillaritis – 11,5 %. Atypical findings, pneumothorax with pneumomediastinum and subcutaneous emphysema are the distinctive features of the disease in 2021.

In 2020 76 % of deceased patients received more than 3 antibiotics. The proportion of patients received more than 1 antibiotic was lower in 2021, but this has no effect on mortality. The proportion of deceased severe COVID-19 patients which required respiratory support was about the same in 2020 and 2021 ($p > 0,05$). In 2021 there was higher number of patients with more than 1 concomitant disease. In 2021 mortality was lower among vaccinated against SARS-CoV-2 patients than among non-vaccinated ($p < 0,05$), confirming the efficacy of immunization.

Among those who died during 2020-2021 ($n=33$) the autopsy revealed diffused alveolar damage and signs of acute respiratory distress syndrome in 84,8 % of cases.

Key words: severe COVID-19, clinical peculiarities, computed tomography of chest, prognostic factors.