

Abstract

The infectious disease COVID-19, caused by the SARS-CoV-2 coronavirus, resulted in a global pandemic in 2020-21 with dramatic health and socioeconomic impacts. SARS-CoV-2 dominantly affects the respiratory tract of an infected individual, but it can also attack other organ systems of the human body. Although most infected patients have an asymptomatic or mild course, the disease of COVID-19 can have a severe, prolonged course and, in some patients, long-term consequences. The aim of the dissertation thesis was to describe in detail the impact of the disease COVID-19 on a relevant sample of the population from the Hradec Králové region, both in patients with a mild course of the disease COVID-19 (treated on an outpatient basis) and in patients with a severe course (requiring hospitalization).

Patients treated on an outpatient basis or hospitalized with COVID-19 in the 1st and 2nd waves of the pandemic in the Czech Republic were included in the study. Respiratory and extrapulmonary symptoms, development of lung functions, radiological changes and selected laboratory parameters were monitored after 3, 6 and 12 months from the onset of the COVID-19 disease. Based on the collected data and their analysis, the temporal evolution of respiratory symptoms and objective signs of lung structure and function damage accompanying the post-acute phases of COVID-19 was described in detail. Although in most patients respiratory and extrapulmonary symptoms disappeared during the observed period, in some individuals they persisted even after a year after illness. The persistence and frequency of most symptoms was higher in hospitalized patients. In particular, elder patients with a high Charlson comorbidity index and a severe course of an acute illness represent potential risk groups with regard to the emergence of post-covid disability. However, a significant finding was that even patients with a mild course of the disease can develop post-covid syndrome, the symptoms of which can persist even more than a year after the disease. Analysis of the results of laboratory tests showed a correlation of some laboratory parameters (e.g. serum albumin levels, N-terminal prohormone natriuretic peptide B) with the clinical development of symptoms and their persistence over time. As part of our study, we proposed an original clinical classification (A-B-C-D/E) of the severity of post-covid disability based on an examination of the patient by a pulmonologist using commonly available methods. We have verified this classification and apply it in the conditions of routine practice.