

# Clinical Outcomes and Epidemiological Characteristics of Coronavirus-Infected Patients with Complete Immunization for Covid-19 Hospitalized In Intensive Care Unit

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## Abstract

The outcome of COVID-19 patients once admitted to the Intensive Care Unit can be compared as to their immunization status. As a stronger immune response is very important for recovery in all medical situations. From a total number of 181 patients with COVID-19 infection admitted to the ICU that had been fully vaccinated with two doses and at least 21 days before admission, all clinical and risk factors parameters were calculated. As it turned out there was a significant fall in all complications and the mortality rate was 10% less than that expected by the SAPS3 (43%). The authors emphasize the recommendation for complete vaccination for COVID-19 having had a very significant fall in the mortality rate. Most COVID-19 vaccines are designed to elicit immune responses, ideally neutralizing antibodies (NAbs), against the SARS-CoV-2 spike protein.

**Key-words:** covid-19; covid immunization; intensive care unit; epidemiology

## Introduction

Serious acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the causative agent of coronavirus disease 2019 (COVID-19), caused more than 3 million deaths worldwide in the 16 months since it was identified in December 2019. It was evident early on that the pandemic could only be control with effective vaccines. [1-8]

The majority of COVID-19 vaccines are designed to elicit immune responses, ideally neutralizing antibodies (NAbs), against the SARS-CoV-2 spike protein. Several vaccines, including mRNA, adenoviral-vectored, protein subunit and whole-cell inactivated virus vaccines, have now reported efficacy in phase III trials and have received emergency approval in many countries.

The aim of this study was to evaluate clinical outcomes of patients with complete immunization (above 21 days after the second dose) admitted to the Intensive Care Unit (ICU).

The outcomes of 182 patients hospitalized in three institutions due to COVID-19 were analyzed. The criteria for admission of these patients were due to the need for oxygen supplementation in high parameters.

Of the 182 patients, 105 were men and 77 women. The mean age was 71 years and the most frequent comorbidities were: systemic arterial hypertension (66%), Diabetes mellitus (36%), obesity (30%), infarction and/or stroke (24%). The degree of pulmonary involvement was < 25% in

25 patients, 25 to 50% in 79 patients and >50% in 78 patients. The mean SAPS 3 found at admission was 43.3% of expected mortality. 98 patients were intubated and the mean time of mechanical ventilation was 12 days, of which 16 died. 42 patients required dialysis therapy. Another 2 patients died after cardiorespiratory arrest without definite cause. 177 patients were immunized with Coronavac and 5 with ChAdOX-1 (Oxford).

Undoubtedly vaccination reduced the hospitalization of immunized, but we know that no vaccine offers full immunity against the severe presentation of the disease. Despite the number of immunized patients who were admitted to the ICU, the mortality found (10%) was lower than that expected by SAPS 3 (43.3%). Therefore, the authors make no apology for non-immunization, for the certainty that this is the way to control the infection and its severe forms.

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## Conflicts of interest

No conflict of interest.

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