

A COMPARATIVE STUDY ON THE OUTCOMES OF MECHANICALLY VENTILATED COVID-19 VERSUS NON-COVID-19 PATIENTS WITH ACUTE RESPIRATORY DISTRESS SYNDROME AT TERTIARY CARE CENTRE AT SMS MEDICAL COLLEGE JAIPUR

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ABSTRACT

Objective: This study compared the effects of COVID-19 patients who inhaled mechanically with a non-COVID-19 history arm.

Methods: Prospective data for each mechanically ventilated patient were collected from both COVID-19 and non-COVID ICU for a period of 9 months. All data were collected and analyzed by SPSS-22 software.

Results: We found that the COVID-19-infected patients were younger age and of male predominance as compared to non-COVID-19 patients. The total hospital stay and ICU stay were longer in COVID-19 patients as compared to non-COVID-19 patients.

Conclusion: We concluded that COVID-19 and non-COVID-19 mechanically ventilated patients with severe hypoxemic respiration at mechanical ventilation at the same time showed similar deaths in these groups but the ICU stay longer was longer in COVID-19 patients.

Keywords: APACHE- acute physiologic assessment and chronic health evaluation, PMR-predicted mortality rate, ICU- intensive care unit.

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INTRODUCTION

On December 29, 2019, more cases of pneumonia were found in a hospital in Wuhan, China [1]. The Chinese Center for Disease Control and Prevention then confirmed, after studying patients' throat culture, that these conditions were created by a new strain of beta-coronavirus [2]. Transmission methods may be thought to be drip-based and touch-based [3]. Early diagnosis is important when considering the short-term onset of acute Respiratory Distress Syndrome after hospitalization and high mortality rates for 2019 Coronavirus. The effects of these patients on death (4.34–26%) and length of stay were reported in various publications. The previous studies have reported a worse effect on these patients than current studies [4,5]. Dangerous contact with health workers and avoid self-harm due to abnormal airflow and excess oxygen. Over time, this practice was reversed and delays in ventilation and long-term oxygen support were adopted as it was recognized that with proper care the risk of contact infection is not high for health workers, as well as to avoid mechanical respiratory illness [6]. This practice is changing perhaps dealing with the changing effects of mechanical inhalation. There is a perception among physicians that COVID-19 mechanical ventilation patients have a worse effect than their non-COVID-19 counterparts. This has led to the flexible practice of initiating mechanical maturation in this group of patients [7].

This study compared the effects of COVID-19 patients who inhaled mechanically with a non-COVID-19 history arm.

METHODS

This hospital-based study was conducted in a teaching hospital for a period of 9 months from April 1, 2020, to December 31, 2020.

In the research team - patients were tested for SARS-CoV-2 by RT-PCR respiratory tract model and treated in the COVID-19 ICU with the help of ventilator equipment.

In the control group - patients were diagnosed with acute hypoxemic respiratory failure requiring fresh air maturity tested and found to be free of RT-PCR, multiplex PCR of other viruses, HRCT-resistant HRCT, bacterial pneumonia, pneumonia aspiration, and sepsis that was treated in a non-COVID-19 ICU.

Patients undergoing special/emergency surgery, respiratory protection, and severe chronic obstructive pulmonary disease (COPD) were not included in the study in patients without COVID-19.

All data were collected based on patient statistics, morbidity, mortality of the ICU, hospital mortality, duration of stay in the ICU, and length of hospital stay.

Data were recorded as per Performa. Data analysis was computer-based; SPSS-22 was used for analysis. In the phase variation, Chi-square test was used. For further changes, the t-tests of independent samples were used. $p < 0.05$ was considered significant.

RESULTS

The mortality rate was 43.00% in covid-19 cases and 39.00% in non covid-19 cases. Mean ICU stay was 7.09 days in covid-19 cases and 5.02 days in non covid-19 cases.

DISCUSSION

We noted that the team infected with COVID-19 was younger and larger in males compared to non-COVID-19 patients. Hypertension was more prevalent in non-COVID-19 ICU patients who could be diagnosed by age. Our findings on age and gender demographics in patients infected with COVID-19 are similar to the previous studies [8,9]. Hospital mortality of 43.8% of COVID-19 patients was similar to the previous studies [10].

In a previous study, the mortality rate of COVID-19 ranged from 12 to 78% in various reports with an average of 25–50%, as well as flexible

Table 1: General characteristics of patients

Variable	Covid-19 (n=100)	Non covid-19(n=100)	p-value
Mean age in years	65.23±8.36	64.12±9.23	0.321
Male: Female	66:34	70:30	0.825
Hypertension (%)	29 (29.00)	35 (35.00)	0.214
Diabetes (%)	36 (36.00)	42 (42.00)	0.126
APACHE IV	72.36±21.03	82.56±20.03	0.301
APACHE IV	72.36±21.03	82.56±20.03	0.301
Mortality rate (%)	43 (43.00)	39 (39.00)	0.212
ICU stay	7.09±2.01	5.02±2.26	0.02*
Total hospital stay	15.03±3.21	12.06±3.01	0.03*

treatment procedures. This may also be due to the different methods of reporting results, some studies that do not report ICU results in patients with ventilation during the study [11-13].

Hospital mortality rates for patients without COVID-19 were 39.00%, with the same series of studies reporting 40–46% mortality in non-COVID-19 medium to high-risk ARDS [14].

The scope of this study is a single institution, small sample size, research capacity may not be large enough to detect significant clinical mortality differences between the two groups. Future multicentric studies of the same environment and the tendency to vary the predictable variance in both groups with sufficient sample size will be important to analyze the variability of key outcomes.

Table 1 shows that mean age in covid-19 cases was 65.23±8.36 yrs and non covid-19 cases was 64.12±9.23 yrs. Both groups was male predominance. Diabetes and Hypertension was higher in non covid-19 cases as compare to covid-19 cases.

CONCLUSION

We concluded that COVID-19 and non-COVID-19 mechanically ventilated patients with severe hypoxemic respiration at mechanical ventilation at the same time showed similar deaths in these groups but the ICU stay longer was longer in COVID-19 patients.

CONFLICT OF INTEREST

None declared.

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ETHICAL APPROVAL

The study was approved by the Institutional Ethics Committee.

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