

# Assessment of Mortality and Morbidity in Covid patients with Previous Pulmonary Pathology of SKZH/CMH and Covid Isolation Hospital Muzaffarabad, AJK

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## ABSTRACT

**Aim:** To study the severity of symptoms, rates of mortality and morbidity in COVID patients with and without previous pulmonary pathology.

**Methodology:** The cohort study consisted of 244 patients and nearly all the individuals had underlying diseases. Data collection forms included demographic data, medical history, history of exposure to infection, symptoms, signs, laboratory findings, HRCT results, treatment measures especially history of corticosteroid use, and duration of illness.

**Results:** In 244 patients, 180 patients were having the pulmonary pathology and other 64 were having no pulmonary pathology. 77.2% (139/180) of the patients showed severe symptoms in the previous pulmonary pathology while 21.8% (10/64) showed severe symptoms in the group with no pulmonary pathology. 16.1% (29/180) patients died because of COVID and were also having pulmonary pathology. While 10.9% (7/64) patients died in the group having no pulmonary pathology.

**Conclusion:** In this study, 16.1% patients died of COVID with pulmonary pathology. While 10.9% patients died having no pulmonary pathology. 77.2% of the patients showed severe symptoms with previous pulmonary pathology while 21.8% showed severe symptoms with no pulmonary pathology.

**Keywords:** Covid-19, Mortality, morbidity

## INTRODUCTION

COVID-19 illness has spread fast over the world by January 30, 2021, with >33 million confirmed cases and one million deaths. COVID-19 disease with severe manifestations is linked to socioeconomic disadvantage, advanced age, and other illnesses.<sup>2</sup> Pulmonary disorders affect 20% to 25% of the adult population (450 million globally, 47 million in the US)<sup>4</sup>. Their incidence is increased during the pandemic. Majority of infected people have only minor symptoms and recover, a small percentage of patients who develop severe infections die as a result of their infection. The fatality rate was 4.6% in a study of 138 patients from our hospital<sup>1</sup>.

By March 30th, 2021, it had caused 128,229,141 infections and 2,803,975 fatalities over the world. Pakistan is ranked 31st among countries with a high burden of disease with 659,116 confirmed illnesses and 14,256 deaths<sup>2</sup>.

Pakistan's mortality rate of 2%<sup>3</sup> is comparable to India's (1.5%) but lower than Iran (4.7%) and some European countries, including the UK (3.4%) and Italy (3.5%)<sup>2</sup>. Sindh received 44% of the country's COVID-19 certified cases after the first case was reported on February 26, 2020, with Karachi<sup>3</sup>.

The objective of the study was to study the severity of symptoms, rates of mortality and morbidity in COVID patients with and without previous pulmonary pathology.

## METHODOLOGY

The COVID isolation unit at SKBZH/CMH Muzaffarabad AJK and covid isolation hospital, bank road Muzaffarabad were used for this prospective cohort study after Ethical Committee permission. COVID-19 (Nasopharyngeal PCR positive) patients aged 18 and up admitted between 19<sup>th</sup> March to 7<sup>th</sup> June, 2020 were included. We obtained demographic data, clinical symptoms, test abnormalities, including inflammatory markers, and imaging results. 244 patients with positive covid-19 were divided into two groups. 180 patients were extracted for the study with previous pulmonary disorder while 64 patients were taken as without

previous pulmonary illness. Asymptomatic (PCR positive for COVID-19 but no clinical manifestations), mild (symptomatic without evidence of pneumonia), moderate (clinical signs of pneumonia and oxygen saturation of 90% on room air), severe (clinical signs of pneumonia and respiratory rate 30 breaths/min or SpO<sub>2</sub> 90% on room air).

## RESULTS

Table 1: Gender distribution

Gender	n	%age
Male	155	63.5%
Female	89	36.5%
Total	244	100%

Table 2: Co morbidities

Comorbidities	n	%age
Heart Failure	10/244	4.5
Hypertension	31/244	12.7
Pulmonary disease	180/244	73.7
Smoking	61/244	25
Diabetes	26/244	10.6
Obesity	17/244	6.9
Kidney disease	10/244	4.5

Table 3: Severity of symptoms

Severity of symptoms	n	%age	P value
Previous pulmonary pathology	188	77%	<0.01
Without pulmonary pathology	56	23%	<0.01
Total	244	100	

Table 4: Mortalities and morbidities

Modalities and morbidities	n	%age	P value
Previous pulmonary pathology	29/180	16.1	<0.01
Without pulmonary pathology	7/64	10.9	<0.01

## DISCUSSION

In our study, overall death rate was 15.9% in patients with previous pulmonary pathology, which was significantly higher than without previous pulmonary disorder. The bulk of our patients (77.2 %) had

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severe disease with 38% requiring emergency non-invasive ventilation (NIV) to address respiratory failure. For 59% of patients, ICU admission was required. COVID-19 mortality rate was 20% to 97% worldwide<sup>5</sup>, depending on ICU facilities, ventilator performance, ICU team experience, patient and disease characteristics and follow-up time. Even the world's top hospitals in Wuhan (97%), New York (88%), the UK (67%) and Italy (53.4%), raising concerns about the role of invasive ventilation in COVID-19 control, especially in low and middle income countries<sup>6</sup>.

In our study, non-survivors had a worse clinical picture, with lower peripheral oxygen saturation, a faster respiratory rate, and raised inflammatory markers with previous pulmonary illnesses. They were in the final stages of Cytokine Release Syndrome (CRS) when they were admitted. In our data, older age was associated with higher mortality, and age >60 years have been linked to an increased risk of death from the start of the pandemic, and our data confirmed this as a predictor of mortality. Non-survivors had a higher prevalence of NLRs of at least 5 than survivors, resulting in more severe neutrophilia and thrombocytopenia. Non-survivors in our group had higher acute renal damage, sepsis, and multi organ dysfunction syndrome than survivors.

During the first wave, both survivors and non-survivors were given experimental drugs such as steroids, antibiotics, anticoagulants, and hydroxychloroquine (HCQ). Despite its potential to reduce viral replication in vitro<sup>7</sup>, hydroxychloroquine failed to show efficacy in RCTs, proving to be hazardous instead. Specific antibiotic in COVID-19 are critical for reversing widespread antibiotic overuse, especially in low and middle income

countries like Pakistan. In the Recovery study, steroids were found to be effective in patients with severe and critical COVID-19<sup>8</sup>.

## CONCLUSION

16.1% patients died of COVID with pulmonary pathology while 10.9% died having no pulmonary pathology. 77.2% of the patients showed severe symptoms with previous pulmonary pathology while 21.8% showed severe symptoms without pulmonary pathology.

**Conflict of interest:** Nil

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