REVIEW ARTICLE

CAUSES OF DEATH IN COVID-19 REVIEW ARTICLE

ABSTRACT

BACKGROUND: More than two million people have died worldwide as a result of the new corona strain virus SARS-CoV-2 and the associated COVID-19 syndrome. Older patients with pre-existing health problems are more likely to die from their illness. We found that septic shock and multiple failures were the most common causes of death, mainly due to inflammation of the lungs, although there was no definitive study on the causes of death and the role of pre-existing conditions. In a few cases, respiratory failure caused by excessive alveolar injury was the cause of immediate death. Comorbidities such as asthma, heart disease, and obesity were present in most cases.

CONCLUSION: Our findings indicate that COVID-19 was related to death in the majority of decedents, rather than being a direct product of preexisting health conditions and comorbidities. As a result, we conclude that COVID-19 killed most patients, with pre-existing health issues playing only a minor role in the death mechanism.

KEYWORD: COVID-19, SARS-CoV-2, Infection, Respiratory Failure, and Pulmonary Infection

INTRODUCTION

COVID-19 is caused by a corona two virus that causes severe respiratory disease (SARS-CoV-2). In December 2019, the epidemic struck its base in Wuhan, China.[1] Keeping track of emerging health patterns can be intimidating at any time of the year. However, the unpredictable presence of coronavirus infection 2019 (COVID-19) has made clarification impossible this year. After the daily COVID-19-related deaths last spring, mortality rates began to plummet, giving hope that the worst was yet to come.[2]However, after many deaths in the summer, prices have risen sharply. This fall, one million new cases of acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infections, which had risen earlier each year, began to occur weekly; as of December 13, the total number of infections in the United States had exceeded 16 million. In addition, an increase in co-

morbidities, such as hypertension, diabetes, coronary heart disease, and chronic obstructive pulmonary disease will increase the risk of these complications.[3,]

Any SARS-CoV-2 infection is a symptom, but most cause respiratory and flu-like symptoms such as fever, chills, cough, and sore throat.4,5

An autopsy is a golden way to determine medical disorders and causes of death. COVID-19 has caused damage to many organs, according to several sources. However, other studies have found that pulmonary thromboembolism can be dangerous in a few cases.[6]

Autopsy procedure: In 26 patients with COVID-19, external examinations, complete autopsy, and tissue sampling were performed using a standard procedure, which included opening all light structures and flashlights of all body parts. In all bodies, safety procedures such as FFP2-goggles, protective jackets, and cut-off gloves have been used, according to new guidelines for successful autopsies in suspected COVID-19 cases. Samples representing the body tissues of both organs were prepared in 4% buffered formalin, dehydrated, paraffin-embedded, and separated by a magnitude of 4 m for histopathology. Hematoxylin and eosin (HE), periodic Schiff's reaction (PAS), Van Gieson's stretchable color, Prussian blue, and Congolese red were used to contaminate paraffin components. Both of these slides were easily analyzed by microscopic at least two pathologists.[7,8]

Reasons of Death And Co-Morbidity

With the increasing Covid-19 mortality rates worldwide, the exact details predicting these deaths remain scarce. According to one study, dead patients were reported to have lower lymphocyte counts or high protein-C levels or D-dimer levels, as evidenced by laboratory results. But this is not enough to know the natural course of physical death. There are many reasons for the cause of Covid-19 patient deaths. Some of them die before they even get to the hospital, as the disease has had a profound effect on their bodies for a long time, making it difficult for them to recover early. While in some of them, the patient may be able to access the hospital but not all will be admitted to the intensive care unit (ICU).9 This happens when patients' chances of survival are meager. They can be supported by non-inhalation and possibly vasopressin, but in the event of further deterioration in health, mechanical respiration will not be considered, and death will occur due to hypoxemia. Another factor could be that, although the patient arrives at the hospital on time, the lack of medical equipment such as respirators, beds, inadequate oxygen supply, lack of other medical services, or highly efficient doctors may cause death. The risk of death from Covid-19 depends mainly on age and previous health conditions. Aging, chronic diseases such as heart disease, asthma, high blood pressure, diabetes, lung disease, cancer can lead to severe and

fatal consequences. Patients admitted to the ICU for these types of flu treatments and tests obtained from SARS-Cov-2 have serious health problems that often lead to their deaths. In these cases, the actual contribution to the virus is meager. At the same time, there are patients in the ICU who suffer from severe trauma, terminal organ failure, brain injury, metastatic cancer, which is eventually diagnosed during hospitalization and death. In these cases, it is difficult to predict whether a viral infection or the patient's underlying condition is the cause of death.[10]

To date, many researchers have conducted several studies to determine the exact causes of Covid-19 mortality. The meta-analysis on Covid-19 comorbidities included 1786 patients, 1044 were male, and 742 were female, aged 41 years. The most common comorbidities found in patients are hypertension (15.8%), cardiovascular and cerebrovascular disease (11.7%), diabetes (9.4%), *** and hepatitis B infection (1.5%), injury (1.5%), respiratory diseases (1.4%), kidney conditions (0.8%), and immunodeficiency (0.8%). (0.1 percent). In a study in Wuhan, China, 41 Covid-19 patients were hospitalized, 100% had pneumonia, 29% had the severe respiratory disease (ARDS), 15% had severe heart damage, and 12% had second infection. Cardiovascular and pulmonary comorbidities like pulmonary thromboembolism, brachial cortex, ventricular heart failure, pulmonary edema, pulmonary hypertension, preexisting emphysema, atherosclerosis, artery disease, artery hypertension, ischemic heart disease were common in patients killed by Covid-19. Among older patients, myocardial injury and myocarditis have become the most common causes of death.[11]

Chronic neurological diseases (CND) such as cerebrovascular disease, psychiatric disorders, neuromuscular and spinal disorders, movement disorders, central nervous system tissue, multiple sclerosis, neurolupus, and malfunction syndrome are identified. Severe Kidney Injury is a significant problem for Covid-19 (AKI) patients. Kidney damage (acute tubular necrosis) with septic shock, mild inflammation, increased blood pressure, and direct kidney infection maybe some of the symptoms associated with Covid-19 that are believed to lead to AKI. Patients suffering from AKI are at greater risk of developing Chronic Kidney Failure (CDK). Digestive problems such as intestinal infections and chronic liver failure can also be identified.[12-16]

CONCLUSION:

With this review, it can be concluded that the underlying conditions of patients play a significant role in the infection of the SARS-CoV-2 virus in a person's death.

Our data show that in most cases with COVID-19 severe and lethal, patients had died of the disease, although many health conditions were available. These findings also support the view that patients killed by COVID-19 appear to have lost a lifetime beyond their age, as reported by others. In addition, our study emphasizes the importance of autopsy in clinics to understand new viral infections better.

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