

The Current Regulations in Handling Autopsy of COVID-19 Corpses: A Narrative Review

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ABSTRACT: The COVID-19 pandemic has affected millions of people around the world either directly or indirectly. Deaths have been attributed to COVID-19 as the underlying cause of death or as a contributing cause of death. It is estimated that millions of excess deaths were associated with the COVID-19 pandemic in 2020 and 2021. The importance of a clinical autopsy on COVID-19 corpses lies in understanding the pathogenesis of the disease better. Moreover, a forensic autopsy may be performed on a COVID-19-infected corpse when indicated for medico-legal purposes. From the autopsy perspective, handling COVID-19-infected corpses requires specific guidelines and safety measures to be followed to limit the transmission of SARS-CoV-2, the causative virus. This is essential as COVID-19 is an emerging infectious disease caused by a newly discovered virus. This review narrates the safety measures that should be followed at different stages of handling COVID-19 corpses, starting from the death scene to burial and funeral. Ethical issues in handling COVID-19 corpses are also briefed in this review. As COVID-19 can be transmitted through infected bodies, it is crucial to wear recommended personal protective equipment, specifically for aerosol-generating procedures. There are specific safety measures to be considered before transporting the body to the mortuary, with particular requirements to be implemented there, such as specific engineering controls, staff training, and autopsy room precautions. After conducting the autopsy, disinfection of the tools and equipment, body bags, transport vehicles, and the autopsy room should be considered.

KEYWORDS: Autopsy, biosafety, body handling, COVID-19, disinfection, PPE.

INTRODUCTION

In recent years, the development of medical sciences and advancement of knowledge has decreased the rates of clinical autopsies [17]. However, with newly emerging infectious diseases, such as the severe acute respiratory syndrome coronavirus (SARS-CoV-1) in 2002 and the Middle East respiratory syndrome-related coronavirus (MERS-CoV) in 2015, it is cardinal to understand the pathogenesis of such diseases, along with determining the leading causes of death [17,20]. The autopsy findings of such corpses have a considerable impact on the epidemiological data, medical practice, and guidelines for managing these diseases [20,28]. COVID-19 has emerged during the past two to three years with ambiguity about its source, way of transmission, pathophysiology, prevention, and treatment [17].

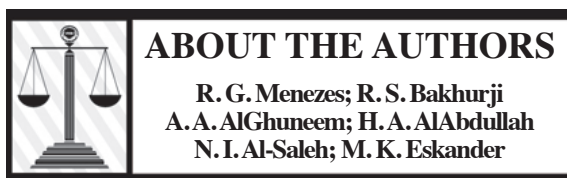
This narrative review sheds light on the crucial regulations to follow with regard to the handling of COVID-19-infected corpses due to their infectivity and identifies the recommended safety precautions to be considered from the time of confirmation of death to storage, transportation, autopsy and postmortem sample collection for autopsy ancillary investigations, burial, and funeral. Finally, the relevant ethical issues in handling COVID-19 corpses are discussed as well.

It is noteworthy to highlight that the regulations and safety precautions recommended in handling COVID-19 corpses and the related autopsy guidelines are not uniform

across the globe. Moreover, as it stands, certain regulations and recommended practices look great in theory but are just not practical to be followed; for instance, the regular and systematic decontamination of vehicles after transportation of a COVID-19 corpse and video transmission of the autopsy. Nonetheless, this narrative review is a compilation of best practices from many different sources and countries.

Emergence of COVID-19 Cases

The first registered case of COVID-19 was in Wuhan, China in December 2019, and a few months later, the World Health Organization (WHO) declared it a global pandemic disease in March 2020 [17]. Fever, fatigue, cough, and other respiratory symptoms were the known presentations of the disease in its mild form. The more severe form presented with acute respiratory distress and failure or even death [6]. In due course of time, more studies were conducted regarding this disease, and more clinical manifestations were identified, such as loss of smell and taste sensations and alterations in bowel habits. In addition, the way of transmission was identified as person-to-person transmission through droplets [6]. These droplets from the infected person can be transmitted directly from coughing or sneezing or indirectly through the hands or objects of the infected person [6]. Few studies were conducted regarding the recommendation for handling COVID-19 corpses and determining their infectivity to lower the risk of infection transmission in people handling these infected bodies and



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