

Enhancing Medical Treatment Support in Geriatrics and Further Reducing the Mortality of Elderly Novel Coronavirus Disease Patients

Mini Review

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Abstract

The coronavirus disease 2019 (COVID-19) has evolved into a serious global emergency and led to a large number of deaths. Elderly COVID-19 patients have a higher mortality rate than those with younger age. The mechanism underlying heightened mortality in elderly COVID-19 patients remains unclear. In this paper, we summarize the characteristics of elderly COVID-19 patients and suggest enhancing medical treatment support in geriatrics and further reducing the mortality of elderly COVID-19 patients.

Keywords

COVID-19; Mortality; Geriatrics; Comprehensive geriatric assessment

Introduction

Unexplained cases of pneumonia occurred in Wuhan, China in December 2019. In early January 2020, Chinese scientists identified its associated pathogen as a novel coronavirus (2019-nCoV). The World Health Organization named this disease COVID-19. According to the latest World Health Organization report, a total of 3,181,642 cases have been confirmed as of 08:00 (GMT+8) on May 1, 2020, having led to the death of 224,301 patients [1]. As the number of cases increases, domestic and foreign scientists, as well as clinical medical personnel have continued to deepen their understanding regarding the epidemiological and onset characteristics of the disease, and have broadened their experience in its diagnosis and treatment [2-8]. After the 2019-nCoV-associated pneumonia outbreak, China mobilized efforts to curb the spread of the infectious disease by adopting comprehensive "enclosure" and "epidemic mitigation" strategies, [9] which have successfully helped curb the spread of the epidemic.

According to a report on the 2019-nCoV pneumonia emergency responses by the Chinese Center for Disease Control and Prevention, a total of 44,672 cases have been reported in mainland China as of February 11, 2020, with 1,023 deaths and a raw case fatality rate of 2.3%. Among the fatalities, there were more men than women (2.8% vs. 1.7%), and Hubei Province had a higher case fatality rate than other provinces. In addition, 81% of the fatalities corresponded to elderly people over 60 years of age. The older the patient's age, the higher the mortality rate; the mortality rate of elderly patients over 80 years old has reached 14.8%.² Patients with concomitant cardiovascular disease (10.5%), diabetes (7.3%), respiratory infections (6.3%), hypertension (6.0%), and cancer (5.6%) had a higher mortality rate. Although the mortality rate of novel coronavirus patients decreased from 14.4% (prior to December 31, 2019) to 0.8% (February 1 to February 11,

2020), the mortality rate among elderly patients remains high. Thus, enhanced disease prevention and treatment are urgently needed for elderly COVID-19 patients.

As a new infectious disease, the medical and scientific communities have only now begun to identify the animal hosts of 2019-nCoV, determine the infectious period, identify the transmission routes and pathogenic mechanisms, and develop and apply effective diagnostic and treatment methods; thus, much work remains [10]. In addition, medical resources and personnel are currently still very scarce in many countries, and it is difficult to achieve individual diagnosis and treatment. The mechanism underlying heightened mortality in elderly COVID-19 patients remains unclear. Currently published academic papers and the author's personal clinical experience suggest that the following aspects may be involved.

(1) Poor immunity, different levels of decline in multiple organ functions, poor nutrition, and susceptibility to infections. Elderly patients have atypical clinical manifestations and concealed conditions that are easily missed and misdiagnosed, which delays the identification and diagnosis of COVID-19. In addition, elderly COVID-19 patients usually have severe or critical conditions, and they are susceptible to acute respiratory distress syndrome and multiple organ failure in the early stages of COVID-19.

(2) Multiple comorbidities. Elderly patients have a higher proportion of comorbid chronic diseases such as coronary heart disease, heart failure, hypertension, diabetes, stroke, chronic kidney disease, and chronic obstructive pulmonary disease. After the onset of COVID-19, cardiovascular and cerebrovascular events such as heart failure, acute coronary syndrome, stroke, and sudden cardiac death, are more likely to occur, which greatly increases the mortality rate.

(3) Multiple diseases and the need for multiple medications. After the diagnosis of COVID-19, if current trial diagnosis and treatment protocols are followed, the addition of antiviral drugs, antibacterial drugs, glucocorticoids, immunomodulators, or intestinal microbial regulators may be needed, which greatly increases the propensity for adverse drug reactions and interactions that can significantly increase the risk of injury to the liver, kidney, heart, and other organs, thereby increasing mortality.

(4) Lack of family and social support. Patients with COVID-19 need to be treated in quarantine, and thus, they lack social support from their friends and family. They are highly dependent on medical personnel for their treatment, diet, clothing, and other activities, who are recurrently preoccupied. Therefore, elderly patients are very prone to problems such as anxiety, depression, cognitive dysfunction, exacerbation of malnutrition, incontinence, bedsores, and deep vein thrombosis during treatment in quarantine.

The strategy for diagnosing and treating elderly COVID-19 patients must undoubtedly be different from that of younger people. Therapeutic efficacy is difficult to achieve if we only focus on organ and systemic diseases without holistically focusing on the patient. Generally, the medical teams involved in COVID-19 treatment are respiratory and critical care medical personnel; experts in geriatric medicine rarely participate in medical support. With the gradual alleviation of the shortage of medical resources and medical staff, I believe that more geriatric medicine and rehabilitation workers should proactively participate in the diagnosis and treatment of COVID-19 patients, particularly elderly patients, to improve therapeutic efficacy and reduce the mortality rate. Geriatric medicine workers should focus on the difficulties in diagnosis and treatment and conduct targeted activities in the following ways.

(1) Proactively conduct multidisciplinary diagnosis and treatment, conduct a comprehensive assessment of the elderly, and diagnose and treat COVID-19 and geriatric syndromes. Early detection of comorbidities and an accurate assessment of disability, swallowing function, cognitive function, nutritional status, and current medications can be achieved through the comprehensive evaluation of elderly patients. While providing proactive treatment for COVID-19, multidisciplinary teams should provide triaged care, nutritional support, physical and psychological rehabilitation, and other comprehensive treatments to maximize therapeutic efficacy.

(2) Proactively emphasize severe illnesses in geriatric patients. The physical and pathological characteristics of elderly patients necessitate different diagnostic and treatment methods than those used for younger patients. Currently, many hospitals in China and other countries have established geriatric intensive care units; thus, there has been an accumulation of extensive experience in

treating the elderly. In light of the higher mortality rate in elderly COVID-19 patients, it is appropriate to involve geriatric critical care experts to participate in the diagnosis and treatment of elderly patients in epidemic areas.

(3) Do everything possible to minimize multiple or unreasonable medications. Elderly patients are the main victims of adverse drug reactions. Geriatric medical personnel should administer medication in a strict and rational manner, following the “benefit principle,” “small quantity principle,” “five rights of medication principle,” “time selection principle,” “discontinuation principle,” and “immediate withdrawal principle”, to minimize adverse drug reactions.

(4) Enhance psychological [11] and physical rehabilitation training. While providing enhanced drug treatment, the patient’s physical, psychological, and cognitive status should be evaluated in a timely manner, and their essential organ systems and psychological well-being should also be enhanced. In particular, the latest integrated intensive rehabilitation concepts should be implemented during the treatment of elderly patients.

In short, it is hoped that geriatric medical personnel can increase their participation in the diagnosis and treatment of elderly COVID-19 patients during this epidemic, actively take advantage of training in their discipline, improve diagnosis and treatment as much as possible, and save more lives.

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