EDITORIAL

The Coronavirus disease 19 pandemic: Does it need comprehensive management?

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Information about the article:

Coronavirus disease 2019 (COVID-19) due to severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) is a contagious illness that first surfaced in Wuhan, China, in the latter part of 2019. [1] It is a rapidly disseminating infectious disease. This novel virus shares resembling genetic characteristics to that of SARS-CoV, which originated an outbreak in 2002.

SARS-CoV-2 shows human-to-human transmission, but the way this virus started to infect humans remains a puzzle. Eventually, it evolved into an emergent global public health emergency and rapidly spread worldwide. On 31st January 2020, the World Health Organization (WHO) identified this current situation as a pandemic. [1] As from the 15th of June 2020, the dynamic data indicates that it has affected 216 countries with 7,690,708 confirmed cases and 427,630 deaths.[2] This pandemic has posed an unprecedented threat to humanity and cast a massive global impact to public health, economy, and society. A further challenge of this crisis is the diversities among countries in terms of socio-cultural heritage, healthcare setup, and availability of resources.

The COVID-19 has focused attention on public health specialists researching paths to control its dissemination. SARS-CoV-2 shows several common clinical features with other coronaviruses. This is a highly infectious respiratory disease with 1.8 days doubling period, which also leads to other physical and mental dysfunctions of the patients, it can show symptoms from mild illness to severe respiratory failure requiring intensive care. In about a fifth of the patients, severe symptoms develop after 5 - 6 days of mean incubation period, and 5% of the patients require intensive care support.[3] Patients in the initial incubation phase who are often asymptomatic, still considered highly contagious. Among the patients, their age, sex, lifestyle, and comorbidities, determine the outcome toward the clinical severity of the disease, from asymptomatic, mild, moderate, to death. The standard laboratory test is a Real-time reverse-transcription polymerase chain reaction (rRTPCR), while Chest X-rays or computed tomography (CT) helps to detect the severity of the disease. Moreover, lung ultrasound helps in making clinical decisions and reduces the use of both chest x-rays and CT.

The management of COVID-19 cases includes early diagnosis and isolation of patients; treatment focuses on general supportive treatment, respiratory assistance, symptom management, nutritional care, psychological support, and infection prevention and control. The key is to

prevent a patient from progressing from mild to severe disease and associated complications. The spread of COVID-19 has forced the implementation of remarkable public health measures across the globe. As part of outbreak response strategies, social distancing, isolation, quarantine, and community containment have been practised in many countries and have been essential in helping limit this new pandemic. Various preventative interventions have been used to diminish the spread of disease, including stringent social distancing via lockdown, and people are advised to frequently clean their hands with soap and water or with approved sanitizers. On 23rd of January 2020, China publicly declared the city lockdown of Wuhan. Lockdown, as a mass quarantine, seems particularly useful in limiting the spread of the disease during the current pandemic. [4] However, it demands extensive behaviour change and puts considerable psychological stress on people. Clinicians need to pace with massive data generated from COVID-19 across the globe dealing with the uncertainties and continuously updating guidelines and clinical practice. Several drugs used in the management of other infections are being researched clinically to find a possible cure. Management is mainly focused on the provision of supportive care with oxygen support representing the primary intervention. However, there is, at present, no specified treatment available, previous pieces of evidence from managing viral infections have provided insights into treating COVID-19. Promising tentative therapies include chloroquine, hydroxychloroquine, azithromycin, lopinavir, and ritonavir. Some compassionate clinical treatments also contained corticosteroids, tocilizumab, Interferon-alpha, and convalescent plasma transfusion. [5] Some of these regimens have provided substantial curing benefits in COVID-19 management. In some patients, there is a chance of developing a hypercoagulable state which may subsequently lead to venous and arterial thromboembolism. [6]

Moreover, researches are ongoing to determine the efficacy of current medicines and find prospective therapeutic targets to develop novel drugs for COVID-19 treatment. Ivermectin has shown a remarkable experimental efficacy, BCG vaccination is being considered for clinical trials, and remdesivir has recently been approved for compassionate use. In critically ill COVID-19 patients, adjustment of concurrent therapies for organ failures, and drug toxicities are additional considerations that need to be evaluated. It is recommended that ARB and ACEI medications be continued in high-risk patients with cardiovascular disease and hypertension. [7] There is a need for a sharp increase in intensive care and ventilation capacities. In the intensive care unit (ICU), critically ill COVID-19 patients utilize considerable medical resources, including personnel, beds, and intensive care facilities. The mainstays of therapy in ICU are fluid restriction, prone positioning, lung-protective ventilation, extracorporeal membrane oxygenation, and organ failure management. Pulmonary rehabilitation is a mandatory intervention for the affected patients. There is no data currently available to support that re-infection occurs after recovery from COVID-19. [6] A phase 2 trial on Ad5 vectored COVID-19 vaccine is currently on-going in China. [8] However, presently, there is no vaccine officially available against SARS-CoV-2.

A global response to prepare health care systems worldwide is imperative, and a collective pool of knowledge about the advancement of clinical diagnostic and management strategies for COVID-19 is a prerequisite. Prompt identification of a potential treatment protocol is a priority in this catastrophic health care crisis. Government agencies are under immense strain to limit the pandemic. At this phase, information sharing, transparency, and preparedness are critical to risk assessments and beginning pandemic control activities. The COVID-19 pandemic will initiate protracted, unpredictable changes in the care of patients. In particular the use of telemedicine consultation, the reduction of face-to-face consultations to avoid crowded waiting rooms, the development of online training, and monitoring clinical trial visits is to be encouraged. To prevent hospital-acquired infections, it is of prime importance to protect health care workers. Minimizing transmission of COVID-19 in hospitals and the community, notably the vulnerable and elderly staying in long-term care facilities, must be considered. It is crucial to provide moral support, counselling services, and guidelines to recovered patients and the community to return to normal life. On-going research will provide more information to develop vaccines and drugs for future pandemics. For instance, an option to increase ventilation capacities is to use home respirators in areas outside the classical intensive care medical infrastructure. The undergraduate medical curriculum will be required to include hands on training in operating home respirators to provide essential support. Understanding of governance, test probability of investigations, and radiological procedures like lung ultrasound are desired.

Moreover, international organizations and national committees should plan well-designed clinical trials and follow more proactive interventions so that their results can be used in managing future pandemics.

Regards,

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