Diabetology

Extended Abstract

Timely blood glucose management for the outbreakof 2019 novel coronavirus disease (COVID-19) is urgently needed - Aihong Wang - PLA Strategic Support Force Characteristic Medical Center, Beijing, China

Aihong Wang

Abstract

ChinaSince December 2019, a novel coronavirus disease (COVID-19) caused by severe acute respiratory syndrome coronavirus2 (SARS-CoV-2) was emerged in Wuhan, China. Due to sus-tained human-to-human transmission, the rapid spread ofSARS-CoV-2 results in a formidable outbreak in many citiesin China and expanding internationally, including Japan,South Korea and the United States. As of 24 February 2020,this new emerging virus had caused a total of 79,331confirmed cases with 2618 deaths globally. The populationis generally susceptible to this coronavirus, and the elderlyand those with certain underlying diseases are more vulnera-ble to SARS-CoV-2, including hypertension and diabetes[1,2].It was reported that the overall proportion of diabetes inCOVID-19 was from 5.3% to 20%[1–6]. Due to compromisedinnate immune response, diabetic patients exist increasedsusceptibility and enhanced disease severity followingSARS-CoV-2 infection. In addition, COVID-19 with diabeteshas much more potential to progress rapidly with acute respi-ratory distress syndrome and septic shock, which may beeventually followed by multiple organ failure. Comorbid dia-betes was associated with much more intensive care unit(ICU) admission. Compared with patients who did not receiveICU care, ICU patients with virus infection were more likely tohave underlying diabetes (22.2% vs 5.9%)[1]. Clinical datashown that the mortality of COVID-19 patients was from2.3% to 15%[1–3,6]. Remarkably, presence of diabetes isassociated with increased mortality. At this stage, the largestepidemiological investigation in China indicated that themortality of COVID-19 with diabetes up to 7.3% (80/1102),which is dramatically higher than that of the patients withoutany comorbidities (0.9%, 133/15,536)[6]. Infection ofSARS-CoV-2 with diabetes might trigger stress condition andincreased secretion of hyperglycemic hormones, such as glu-cocorticoid and catecholamines, which results in elevatedblood glucose, abnormal glucose variability and diabetic com-plications. Moreover, in order to raise admission capacity oflocal hospitals, huge amount of Chinese medical personnelswent to Wuhan, the epicenter of the outbreak, to battleagainst this epidemic. However, compared with professionalendocrinologists, most of front-line respirologists and criticalcare specialists in Wuhan may be lack of the concern of bloodglucose and insufficient of clinical experience of diabetestherapy, which may lead to blood glucose fluctuation forpatients with diabetes. Therefore, timely and standardizedblood glucose management for diabetic patients withCOVID-19 is urgently needed.For the COVID-19 patients with diabetes, tailored thera-peutic strategy and optimal goal of glucose control shouldbe formulated based on clinical classification, coexistingcomorbidities, age and other risk factors. Blood glucoseshould be controlled for all patients during hospitalizationto monitor the progress of illness and avoid aggravation. Forcritical cases, early identification and timely reductionadverse drug reaction (for instance, glucocorticoid-inducedhyperglycemia) could prevent worse symptoms. During the4-week follow-up period after discharge, blood glucose home-ostasis should be maintained continuously and patients needto avoid infectious diseases due to a lower immune response.Long-term follow-up is still essential for diabetic patients toreduce diabetes-related complications and mortality

With the aim of preventing person-to-person transmission,a variety of online services of glucose management have beenimplemented widely for diabetic patients and general popula-tionduring the outbreak of COVID-19in China. Thepopulariza-tion of Internet and smartphones, as well as

Aihong Wang
PLA Strategic Support Force Characteristic Medical Center, Beijing, China, E-mail: wah306@sohu.com

emerging fifthgeneration networks, have ensured endocrinologists to pro-vide remote medical consultation for the patients who arenot advised to go to the hospital during the COVID-19 outbreak.Furthermore, free educational videos and e-books on diabetesself-management and COVID-19 prevention have been pro-vided for the public via WeChat mobile app. To date, theseonline services and resources have played remarkable rolesin the nationwide COVID-19 control in China.

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