

COVID-19: underlying metabolic health in the spotlight

At the time of writing, 3·7 million cases of coronavirus disease 2019 (COVID-19)—caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)—have been reported worldwide, resulting in 260 000 deaths. Since the initial cluster of cases of pneumonia in Wuhan, China, was first reported on Dec 31, 2019 (and subsequently confirmed to be due to a novel coronavirus), this localised outbreak rapidly transitioned to being declared a Public Health Emergency of International Concern (PHEIC) by WHO on Jan 30, 2020, and subsequently a global pandemic as of March 11. Following the initial outbreak in China, 212 countries and territories have reported laboratory-confirmed cases of COVID-19, with Europe and the USA reporting the highest number of cases and deaths. Although transmission of the virus has now been suppressed in China, and the peak of infection passed in Europe and the USA, worrying numbers of cases and deaths are now being reported in Brazil, Russia, India, and many other countries.

In the first case series of hospitalised patients with COVID-19 from Wuhan, published on Jan 24, underlying comorbidities were reported in 50% of patients (diabetes [20%], hypertension [15%], and cardiovascular disease [15%]). Subsequently, data from 122 653 laboratory-confirmed COVID-19 cases reported to CDC in the USA between Feb 12 and March 28, showed that approximately one third of patients had at least one underlying condition or risk factor, of which diabetes was the most frequently reported (in 10·9% of cases). Moreover, 78% of intensive care unit (ICU) admissions and 94% of deaths (where complete information on underlying conditions or risk factors was available) occurred in those with at least one underlying health condition. More recently, the first report characterising glycaemic control among patients hospitalized with COVID-19 in the USA (1122 patients admitted to 88 US hospitals between March 1 and April 6) showed that approximately 40% had diabetes or uncontrolled hyperglycaemia on admission, and death rates were more than four times higher among those with diabetes or hyperglycaemia (28·8%) than those without either condition (6·2%). From the available evidence, diabetes (or more broadly poor glycaemic control) is clearly one of the most important comorbidities linked to COVID-19

severity and outcomes. For that reason, *The Lancet Diabetes & Endocrinology* has recently published practical recommendations for the management of diabetes in patients with COVID-19, authored by an international panel of experts in the fields of diabetes and endocrinology. The recommendations include much needed guidance on preventing infections in people with diabetes, managing infected patients with diabetes in the ICU, and monitoring of hospitalised (non-ICU) patients for new-onset diabetes—an area of increasing concern.

With an estimated 85% of people with type 2 diabetes also having overweight or obesity, and obesity a known risk factor for respiratory tract infections such as pneumonia, the impact of BMI on COVID-19 severity and outcomes is of major public health importance. Recently posted data (4103 laboratory-confirmed COVID-19 patients treated at an academic health system in New York City between March 1 and April 2, of whom 1999 were hospitalised) shows that a BMI >40 kg/m² is one of the strongest predictors of hospitalisation (OR 6·2), behind age ≥75 years (OR 66·8) and age 65–74 years (OR 10·9). As highlighted in the World Obesity Federation Policy Statement, the COVID-19 pandemic has impacted people living with obesity in many ways, ranging from food shortages and insecurity, reduced opportunities for physical activity during lockdown, anxiety from cancellation of bariatric surgeries, and compounded mental health issues due to the evolving situation and isolation. As people living with obesity are an already vulnerable group, further data is urgently required to determine the risk of COVID-19 severity and outcomes across all BMI categories to provide clear guidance and inform patient care.

With COVID-19, we have not just been fighting a communicable disease alone but also a growing backdrop of non-communicable diseases (NCDs; such as diabetes and obesity) that have needlessly raised the death toll. In the aftermath of this pandemic, with the possibility of a global recession, mass unemployment, and a financial deficit that could impact the world for decades, it is perhaps naïve to think that additional resources will be available to improve metabolic health and reduce the burden of NCDs. But that is exactly what needs to happen. ■ *The Lancet Diabetes & Endocrinology*



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For the **number of coronavirus cases and deaths** see <https://www.worldometers.info/coronavirus/>

For the **first case series of patients with COVID-19** see **Articles Lancet** 2020; **395**: 479–506

For the **CDC data** see *MMWR Morb Mortal Wkly Rep* 2020; **69**: 382–86

For more on **glycaemic control among patients hospitalized with COVID-19** see *J Diabetes Sci Technol* 2020; In press

For **management of diabetes in patients with COVID-19** see **Personal View Lancet Diabetes Endocrinol** 2020; published online April 23. [https://doi.org/10.1016/S2213-8587\(20\)30152-2](https://doi.org/10.1016/S2213-8587(20)30152-2)

For **BMI >40 kg/m² as a factor in hospitalization and critical illness among patients with COVID-19** see *medRxiv* 2020; published online April 11. <https://www.medrxiv.org/content/10.1101/2020.04.08.20057794v1> (preprint)

For the **World Obesity Federation Policy Statement** see <https://www.worldobesity.org/news/obesity-and-covid-19-policy-statement>