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Editorial

**EDITORIAL NOTE ON
PREVENTION OF SARS-COV-2
INFECTION AND TREAT THE
EARLY PHASES of COVID-19**

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EDITORIAL

A novel coronavirus, severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2), is the cause of coronavirus disease 2019 (COVID-19). It emerged in China in 2019 and has since spread worldwide. COVID-19 has a wide spectrum of clinical scenarios, ranging from totally asymptomatic to death. Prevention remains the best approach against SARS-CoV-2 infection and a number of strategies have been adopted, including social and medical interventions. Some vaccines have been proposed and several pharmacological approaches, mainly based on repurposing drugs, are currently under investigation and require validation. This review summarizes the ongoing clinical trials using pharmacological strategies, including vaccines, as prophylaxis to avoid SARS-CoV-2 infection or limit its transmission, and as early treatment of COVID-19 to prevent severe clinical outcomes.

On 11 March 2020, the World Health Organization (WHO) announced a pandemic situation due to the spread of severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2), a novel positive-sense, single-stranded RNA beta coronavirus identified in humans in December 2019 in China that is the cause of coronavirus disease 2019 (COVID-19) In recent years, six other outbreaks caused by coronaviruses have been identified in humans; of these, severe acute respiratory syndrome coronavirus-1 (SARS-CoV-1) and Middle East respiratory syndrome coronavirus (MERS-CoV) were the most pathogenic. SARS-CoV-2 uses the same cellular receptor as SARS-CoV-1, namely human angiotensin-converting enzyme 2 (hACE2).

The severity of COVID-19 covers the full clinical spectrum from asymptomatic to death. The

most common symptoms at the onset of illness are fever, cough, myalgia or fatigue. Headache, diarrhoea and dyspnoea are less common Sepsis is the most common complication, followed by respiratory failure, acute respiratory distress syndrome, heart failure and septic shock .

Prevention of an infectious disease comprises primary, secondary and tertiary elements. Primary prevention aims to reduce the number of new cases by interrupting transmission of the microbiological agent to humans or increasing their resistance to infection. Secondary prevention involves the identification of new cases at the earliest stage, and intervention to halt the progression of an infection during its early, often asymptomatic phases. Finally, tertiary prevention is based on treatments that aim to prevent the worst outcomes of a disease in an individual. The efforts of international health authorities have focused on rapid diagnosis and patient isolation, as well as on the search for therapies able to tackle the most severe effects of the disease. By 7 January 2021, two vaccines—the BNT162b2-BioNTech/Pfizer vaccine and the mRNA-1273-Moderna vaccine—had been approved by the US Food and Drug Administration (FDA) and European

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