Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Commentary

A commentary on "Diagnosis and treatment of coronavirus disease 2019 (COVID-19) Laboratory, PCR, and chest CT imaging findings"

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Dear editor.

The first cases of atypical pneumonia of unidentified etiology were reported on December 30, 2019, from Wuhan, China. By January 7, 2020, a novel betacoronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), was identified, while the disease has been named COVID-19 [1]. COVID-19 has now been declared a pandemic, affecting nearly every country, with over 90 million confirmed cases and >2 million deaths [2]. The initial clinical case series from China largely comprised hospitalized patients with severe pneumonia. Further data suggested that approximately 80% of the patients have mild disease, 20% require hospital admission, and approximately 5% require intensive care admission [3]. Mortality rates are higher among people over 60 years of age and with coexisting conditions (most commonly hypertension, diabetes and cardiovascular disease). Abbasi-Oshaghi et al. [4] performed this review focusing on currently available information on the etiology, clinical symptoms, diagnosis, and mechanism of action of COVID-19. Furthermore, they presented an overview of diagnostic approaches and treatment of this disease according to available findings.

In the initial screening, computed tomography (CT) examination is needed for the auxiliary diagnosis. The diagnosis is then confirmed by the positive results of the nucleic acid amplification test (NAAT) of the respiratory tract or blood specimens using reverse transcription real-time fluorescence polymerase chain reaction (RT-PCR). However, this diagnosis method is highly limited [1]: When the viral load is low, the detection rate is low, leading to false-negative results [2]. Only a positive diagnosis can be made, but the severity of COVID-19 and its progression cannot be judged (in contrast, CT imaging can reveal disease progression) [3]. The supply of the reagents cannot keep up with the demand, and the quality of new products of major companies awaits to be studied and improved [4]. It takes 1 day or longer to obtain the results after sampling. For these reasons, Chinese researchers strongly recommend CT imaging as the main basis for the diagnosis of COVID-19 in the current situation. An academician of the American Society for Radiation Oncology called for the immediate establishment of a CT-based diagnostic method for COVID-19 and improvement of the detection rate of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). If a patient with clinically suspected COVID-19 has negative NAAT results but positive imaging results, the patient should be isolated and treated as soon as possible. The advantage of CT examination in the diagnosis of COVID-19 is obvious.

This review paper will help the physician to diagnose and successfully treat COVID-19. The key challenge in managing COVID-19 remains patient density. However, accurate diagnosis as well as early identification and management of high-risk severe cases are important for many clinicians. For improved management of cases, there is a need to understand test probability of serology, RT-PCR and radiological testing, and the efficacy of available treatment options that could be used in severe cases with a high risk of mortality.

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Shuang Wu performs the commentary, Xiaofei Li edits the language.

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