

too. However, these measures should at the same time prevent any ethically incorrect behavior from passing under a penal shield. ■

PAYAM TABAEE DAMAVANDI

Medical doctor, University of Milano-Bicocca, Monza, Italy

NATALIA FABIN

Medical student, University of Bologna, Bologna, Italy

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Is computed tomography really the future of biology for diagnosing COVID-19 infection?

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Editor – Though the COVID-19 outbreak has now reached every continent and contaminated more than 1 million people causing tens of thousands of deaths and the lockdown of almost 3 billion people. To confirm the diagnosis, the Centers for Disease Control and Prevention recommends the collection of SARS-CoV-2 ribonucleic acid using reverse transcription polymerase chain reaction (RT-PCR) on nasopharyngeal swab specimens. This highly specific technique presents three main drawbacks: nasopharyngeal collection is complex and technician-dependent; after healing, the viral antigens disappear and RT-PCR becomes negative; and RT-PCR test for COVID-19 exhibited sensitivity as low as 60–70%.¹ Following one of the first significant study demonstrating that chest computed tomography (CT) has a sensitivity of 97% and a negative predictive value of 83%, the authors suggest CT may be considered as a primary tool for COVID-19 detection, that consequently lead some practitioners to use it as a SARS-CoV-2 primary diagnostic tool.¹ More recently, others conclude that chest CT is important in the screening of patients in whom disease is clinically suspected, especially those who have negative initial RT-PCR results.² However, in 2020 it is difficult for scientific community to perceive how a radiological exam as CT may supersede the biological tests in the diagnosis of a specific infectious agent.

Since 1985, the HIV pandemic has illustrated the excellence of serological diagnosis test capabilities, limiting the role of RT-PCR to the diagnosis of primo-infection and quantification

of the viral load to assess treatment efficacy.³ Acute viral and bacterial pathogens stimulate immune system, generating memory antigen-specific B cells differentiating to plasma cells that secrete immunoglobulin M (IgM) and IgG antigen-specific antibodies, the main support of the future vaccine effectiveness.⁴ The presence of COVID-19 specific antibodies has recently been confirmed, allowing to understand the development of this new infection disease and the activation of the immune response by specific antigens.⁵ Thus, serology has certainly more than ever a role to play in this warfare against the COVID-19 pandemic because it requires a simple venous blood sample; costs a fraction of RT-PCRs or CT price; provides results in less than 2 hours; helps distinguish healed from asymptomatic and never-infected people; and enables positive COVID-19 diagnosis from the first week following the onset of symptoms. A mass testing should be made available quickly, to securely and adequately exit the global lockdown. Academic laboratories, healthcare companies, and governments have the responsibility to diligently build and provide the necessary tools to fight COVID-19 pandemic. Finally, CT should continue to be used in cases of severe and atypical clinical presentations, and maybe should not be used in the screening of clinically suspected patients.⁶ ■

JEAN-FRANÇOIS VENDRELL

Medecin expert consultant, Centre Hospitalier Universitaire de Nîmes, Nîmes, France

JEAN-PIERRE VENDRELL

Praticien hospitalier, Centre Hospitalier Universitaire de Montpellier, Montpellier, France

GÉRALD GAHIDE

Professeur associe, Centre Hospitalier Universitaire de Sherbrooke, Quebec, Canada

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