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## Editorial

# COVID-19 pneumonia: The fight must go on



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COVID-19  
Risk factors  
Severity of illness index

The SARS-Cov 2 pandemic has required all radiologists to familiarize themselves with chest imaging and the radiological signs of COVID-19 pneumonia, making many radiologists new experts in this field [1,2]. In this issue of Diagnostic & Interventional Imaging, Li et al. provide an overview of imaging data related to SARS-Cov-2 infection [3]. The authors highlight the limitations of chest X-ray, being insufficiently sensitive for the detection of ground glass opacities, which are the predominant imaging features in patients with COVID-19 pneumonia [4]. They advocate the use of computed tomography (CT) as a screening test, allowing early isolation of infected patients. However, this strategy was not adopted in France, where the French health authority recommends performing CT examination mainly in patients with thoracic symptoms, such as dyspnea or desaturation, following the advice of the French Society of Radiology and that of the Society of Thoracic Imaging [5,6].

The temporal changes of radiological abnormalities are well described by Li et al., with a worsening generally occurring 8 to 10 days after the onset of symptoms and a progressive transformation of the ground glass opacities into linear consolidation, consistent with a phase of organizing pneumonia, which is the nearly universal lung response to all causes of injury [7]. Pulmonary embolism is another CT feature of COVID-19 pneumonia [8,9]. The frequency of pulmonary embolism (observed in up to 30% of patients with in severe forms) is mentioned, as well as extra-thoracic complications such as adrenal hemorrhages or temporal brain damage [Li].

The use of CT is not restricted to the diagnostic phase of COVID-19. The study by Devie et al. highlights the role of CT as a prognostic tool [10]. Fifty-eight of the 158 patients they retrospectively evaluated had a severe form of COVID-19, defined by the need for invasive or non-invasive ventilation, extracorporeal membrane oxygenation or death. Central involvement, pleural effusion and the degree of lung involvement were identified as independent predictors of severity. The originality of this study was to validate that instead of a tedious lobe-by-lobe assessment of the extent of pneumonia, a more rapid assessment could be performed. It consisted of evaluating whether one of the two upper lobes or the middle lobe had more than 50% involvement, rather than separately evaluat-

ing each lobe involvement using a 5-point scale, as indicated in the structured report of the French Society of Radiology [11].

Even though radiologists have gained experience in diagnosing COVID-19, and Diagnostic & Interventional Imaging has greatly contributed in this gain of knowledge during the first wave of the pandemic [12], there are still open questions such as a rational use of CT angiography. Pulmonary embolism was indeed a relatively rare event in the study population evaluated by Devie et al., with only 5.9% of contrast-enhanced CT examinations showing such findings, contrasting with the 30% prevalence mentioned by Li et al. in severe forms of the disease [3,10]. The other question mark relates to the long-term sequelae, for which there is still little evidence. Li et al. reported that most patients had persisting CT abnormalities at the time of discharge, which does not mean irreversible damage. It is particularly important not to overuse the term traction bronchiectasis, especially in areas of consolidation. Bronchiectasis in areas of organizing pneumonia might be reversible, and one must be very careful in describing fibrous sequelae.

Last but not least, there are many expectations as to how artificial intelligence can help manage this global health crisis, with the development of automated diagnostic, quantification and prognosis tools, made possible by massive data sharing and the development of academic partnerships [13,14]. Let's hope that the radiologists who have great expectations will not be disappointed!

As of this writing, new threats are emerging with the spread of new variants of SARS-Cov-2. Our combined efforts to fight this pandemic must not stop and our entire community must remain mobilized. The first waves of the pandemic have indeed highlighted how important imaging is for a rapid and efficient patient care.

### Disclosure of interest

The author declares that he has no competing interest.

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