

# LUNG ULTRASOUND IN COVID 19 PANDEMIC

SHOULD BE USED  
FOR DIAGNOSIS  
AND MONITORING  
FROM NOW ON ?



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## INTRODUCTION

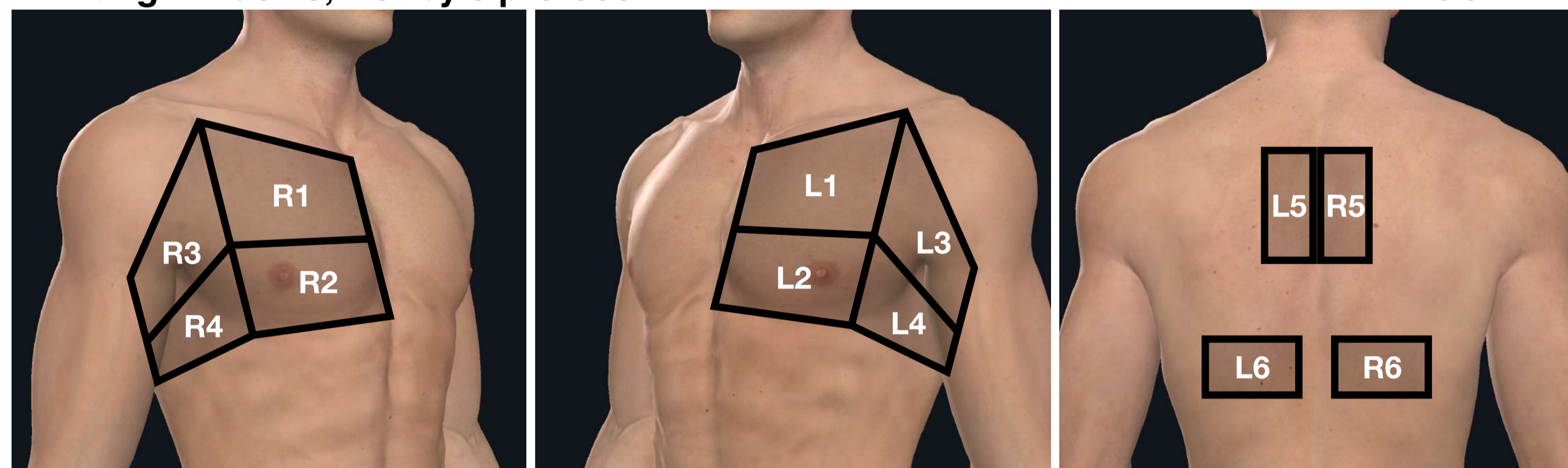
Until now, we had 3.551 suspected cases of coronavirus related disease SARS-CoV-2 (COVID-19) in Brazil, with 428 confirmed cases and 1.841 cases discarded. 11.278 remain undiagnosed<sup>1</sup>. In the initial phase, the use of the molecular test can have a sensibility of 60 to 70%. CT Scan seems to be the most sensitive tool<sup>2</sup>. The availability of CT scan devices in Brazil is limited<sup>3</sup>. The main finding related to COVID-19 is the presence of peripheral ground glass opacities<sup>4,5</sup>. The peripheral finding in CT scan can be visualized by lung ultrasound, with high concordance<sup>6</sup>.

## LITERATURE REVIEW

A case presentation from Rome, Italy, of a COVID-19 patient, described the presence of an irregular pleural line, subpleural microconsolidations and fused, coalescent B lines. The Rouby protocol was used to perform the examination (superior/inferior, anterior/lateral/posterior, right/left windows)<sup>8</sup>. (Fig 1). A 20 cases serie from Xiam, China, also using Rouby protocol, shows that 75% of patients presented ultrasound findings in postero-inferior windows. Coalescent B lines, pleural irregularities, microconsolidation and consolidations with air bronchogram were demonstrated.<sup>9</sup>. Another 20 cases serie, from Changsha and Pekin, China, evidenced pleural irregularities, several B lines patterns (focal, multifocal, confluent), consolidations with different patterns (small and multifocal, lobar with air bronchogram and A lines during recuperation phase. Pleural effusion was an infrequent finding<sup>10</sup>. Finally, a 12 cases serie of Piacenza, Italy, shows a diffuse B pattern, with preserved areas. Three patients presented posterior microconsolidations<sup>11</sup>. The oblique lung windows increase the pleural visualization area (except L5 and R5, where need to be longitudinal, according to Gargani and Volpicelli<sup>12</sup> (Fig. 2).

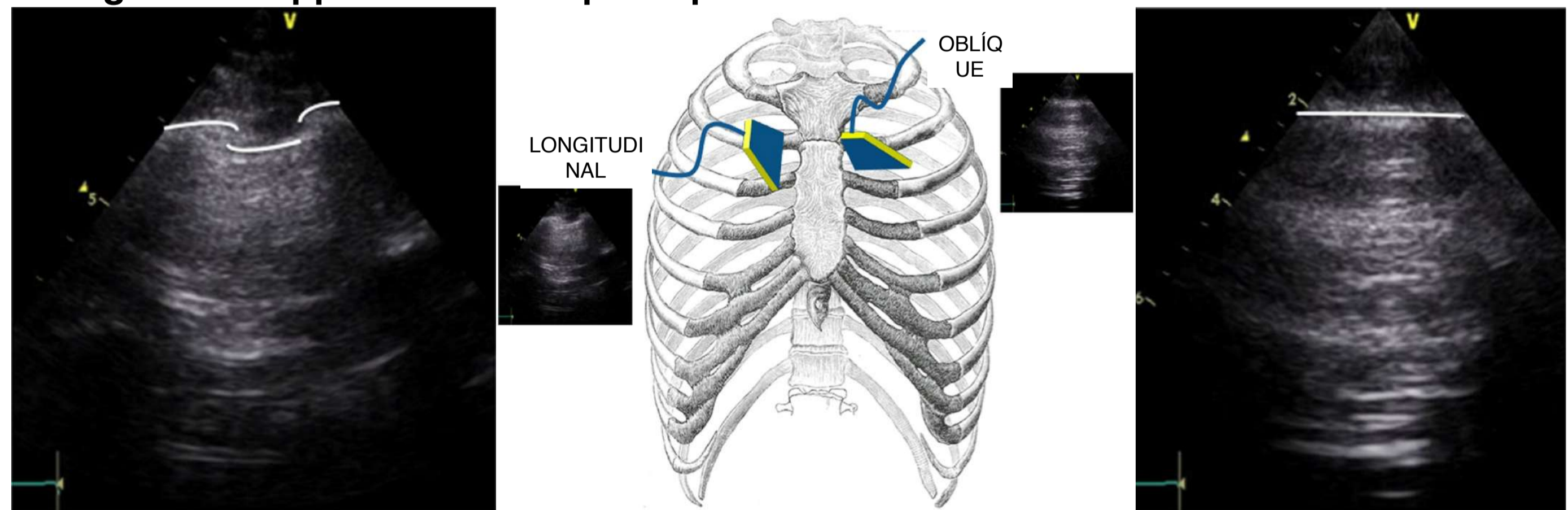
### Lung windows, Rouby's protocol

FIGURE 1



### Longitudinal approach vs oblique in pleural visualization

FIGURE 2



Adapted from Gargani, Volpicelli (2014)

## RECOMMENDATIONS

Lung ultrasound must be used for severity staging and monitoring of critically ill patients with COVID-19. (**STRONG** Recommendation). We must use the Rouby's protocol with oblique approach for the visualization and registration of the lung windows to perform the examination. (**STRONG** Recommendation). Routine lung ultrasound examination should not be used for tracking and diagnosis of COVID-19. (**STRONG** Recommendation)

## REFERÊNCIAS

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