Actas de Investigación Oncológica

Reflexión

Reflection: Could Icatibant be considered as a therapeutic weapon against COVID19 respiratory distress?

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So far, what we know about COVID 19 (now called SARS-CoV-2) infection is that it produces as a complication, among others, severe respiratory failure with rapid progression to respiratory distress syndrome, which eventually requires mechanical ventilation.

Physiopathologically, COVID 19 uses the angiotensin converting enzyme (ACE) receptor as a channel to penetrate, through a receptor-mediated endocytosis system, into the cells that form the pulmonary alveolus. ACE acts physiologically as a mediator, facilitating the conversion of Angiotensin I to Angiotensin II. In the process, degradation of bradykinin peptide occurs. The latter acts as a mediator of the inflammatory cascade, producing vasodilation and intervening in the metabolism of eicosanoids and promoting other pathologies such as angioedema (1). Moreover, according to some authors, bradykinin is the responsible for increasing the levels of interleukin 6 (IL-6) in pulmonary tissue, cytokine with a close relationship with the lung damage provoked by COVID19 and target of the monoclonal antibody Tocilizumab (2).

COVID19, due to its penetrance mechanism and as a consequence of the depletion of the ACE enzyme in the alveolar epithelium, produces an increase in tissue bradykinin, promoting inflammation and interstitial edema. This fact may explain the typical non-productive cough and the unfavorable evolution of some patients, progressing to respiratory distress in an accelerated manner. In our series of patients, the symptomatology, radiological findings and evolution is similar to that observed in acute pulmonary edema from infectious-inflammatory causes.

Our hospitals are equipped with a selective bradykinin receptor inhibitor called Icatibant. This drug is sometimes used as a treatment for the acute attack of hereditary angioedema. Considering that behind the physiopathological mechanism behind the respiratory distress produced by Covid 19, bradykinin accumulation may be involved, the use of Icatibant in this context may represent a remarkable advance and promote the recovery of patients with poor respiratory evolution infected by COVID 19.

In other clinical entities with acute respiratory distress, according to the scientific literature, good results have been seen in clinical cases of hantavirus infections treated with this drug. In fact, the clinical and radiological (CT) behavior of hantavirus infection is very similar to that of COVID19 infection (3, 4). Furthermore, due to its mechanism of action, Icatibant can interrupt the transition to sepsis or septic shock, which although not very frequent, is described for COVID19 (5).

In this context, Icatibant can increase

survival, promote good clinical progress and reduce the time spent in the ICU, with a reduction in known collateral damage. Its use is simple, its mode of administration is subcutaneous and only a dose of 30 mg is required. Improvement can be seen around 48 hours if its behaviour is similar to that observed in hantavirus infection. We consider that it can be a good starting point and addiction to the current therapy of COVID19, a perfect complement to improve patients. Consequently, the use of Icatibant should be encouraged through the Compassionate Use System in order to have a greater number of patients treated and increase the scientific evidence available in this context, while no comparative clinical trials are carried out once the global emergency situation generated by this pandemic has ceased.

Competing interests: None to declare.

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