

## **Anti-SARS-CoV-2 monoclonal antibodies, an opportunity to be seized**

Press release of the French National Academy of Medicine

February 8, 2021

Elderly or comorbid patients are at risk of developing severe forms of Covid-19, requiring 15 to 20% of them to be hospitalized in a medical or intensive care unit. Currently, these patients are followed at home by their doctor, have no access to any specific treatment and are hospitalized in case of aggravation.

New antiviral treatments are now available. These are monoclonal antibodies that specifically block the entry of the virus into cells. This is a passive immunotherapy that must be administered within days of infection, following the same principle as serotherapy: the use of plasma from convalescent patients or hyperimmune immunoglobulins [1]. In contrast to these other modalities, they have no risk of infection and their neutralizing activity on the virus and its variants is well characterized. Moreover, they can be produced regularly, on a large scale and under the same quality controls as biomedicines used to treat inflammatory and autoimmune diseases.

Monoclonal anti-SARS-CoV-2 antibodies have been the subject of two randomized, double-blind, placebo-controlled trials, which demonstrated a significant decrease in the viral load (primary endpoint of these studies) and a reduced risk of hospitalization (secondary endpoint) in patients at risk of severe disease [2,3]. The results of other not yet published studies confirm the value of these treatments, particularly in case of epidemic outbreaks (clusters) in hospitals and nursing homes. A detailed analysis of current data suggests that the British variant is also sensitive to these treatments [4]. These antibodies have been licensed and used for 2 months in the United States and Canada, with several thousand patients having been treated and a very satisfactory tolerance. Some European countries, such as recently Germany, have allowed access to these treatments. From a medical, logistical and even industrial point of view, since some of the antibodies are bio-produced there, France has the means to treat elderly and frail patients in order to avoid prolonged hospitalization and severe complications, while continuing to study their tolerance and effectiveness and to assess the cost-benefit ratio of their use.

In the current epidemiological context of Covid-19, considering the insufficient vaccination coverage of high-risk populations, the French National Academy of Medicine recommends accelerating the process of authorizing the use of these monoclonal antibodies in France, building up suitable stocks and organizing the logistics circuit allowing their administration to elderly and frail patients from the first days of infection.

1. Press release from the French National Academy of Medicine "Anti-SARS-CoV-2 hyperimmune immunoglobulins, an urgent strategic choice", April 8, 2020

2. Chen P, et al. ARS-CoV-2 Neutralizing Antibody LY-CoV555 in Outpatients with Covid-19. *N Engl J Med* 2021; 384:229-237 DOI: 10.1056/NEJMoa2029849
3. Weinreich DM et al. REGN-COV2, a Neutralizing Antibody Cocktail, in Outpatients with Covid-19. *N Engl J Med*. 2021 Jan 21;384(3):238-251. doi: 10.1056/NEJMoa2035002.
4. Increased Resistance of SARS-CoV-2 Variants B.1.351 and B.1.1.7 to Antibody Neutralization. (pré-publication) <https://doi.org/10.1101/2021.01.25.428137>