IPOPI – ESID Joint Statement

The use of monoclonal antibody treatment for patients with PID in the context of the COVID-19 pandemic

11 November 2021

The role of monoclonal antibody (mAb or moAb) therapies in the treatment of COVID-19 in primary immunodeficiency (PID) patients is currently being discussed by the PID expert and patient community. Monoclonal antibodies have been used successfully to treat patients infected by SARS-CoV-2, including patients with PID, in specific circumstances. This joint statement outlines some key recommendations based on current clinical experience.

Let us first bear in mind…

It is helpful to recall that the risk level for most patients with PID of developing severe symptoms of COVID-19 is comparable to that of the general population, with only a few very rare PIDs being effectively at additional risk (for more info see Joint COVID-19 statement published 28.10.2021).

Vaccination against COVID-19 for patients over 12 years old is essential. Additionally, once the available vaccines have been approved by regulatory agencies for use below age of 12, they should also be given to patients with PID (following an agreement between the patient and their treating physician).

Although it does not apply to all patients, many PID patients (including predominantly antibody deficiencies, such as hypogammaglobulinemia, CVID, etc.) have shown the ability to produce significant amounts of anti-SARS-CoV-2 antibodies after receiving the vaccine. Vaccines also stimulate cellular immunity, which should be considered in the rationale to recommend vaccinations in PID patients.

What are monoclonal antibody therapies?

Monoclonal antibodies are laboratory-made proteins acting like human antibodies. Hence, they mimic the immune system's ability to protect against harmful antigens such as viruses. There are many kinds of monoclonal antibodies, developed for example to treat chronic inflammatory diseases (Crohn's disease, rheumatoid arthritis, psoriasis, etc.), cancers and other conditions. Rituximab is one of the mAbs that have been used for many years in some settings for patients with PID (autoimmune cytopenia, EBV lymphoproliferation, pre/post-hematopoietic stem cell transplantation).

Anti-SARS-CoV-2 mAbs specifically target the S protein located on the surface of the SARS-CoV-2 virus, ensuring that the virus cannot attach to human cells.

Preliminary data from clinical studies suggest that some of these mAbs, when administered at the early stages of infection, can be beneficial in the management of people at high risk of developing a severe course of COVID-19.

The use of monoclonal antibodies for patients with PID – current recommendations

Whilst additional efforts to stimulate further research on the use of COVID19 mAbs in affected PID patients are needed, experience and data collected so far show that:

- The use of mAbs is **not** recommended for all patients with PID.

- The use of mAbs is recommended specifically for PID patients who run the risk of developing a severe course of COVID-19.
- There have been good results observed following administration of mAbs within the first 5 days of infection in **some patients with PID** who tested positive for SARS-CoV-2 (patients with PID associated with pulmonary pathology (Chronic Obstructive Pulmonary Disease, COPD) or with chronic respiratory insufficiency or any other vital organ dysfunction).

- More research is needed, but early observations have shown that the use of mAbs could also be considered for chronic forms of COVID-19 (long COVID), or for patients who relapse.

- Lastly, mAbs can also be useful as a means of prevention of COVID-19, in rare situations with very high risk such as in cases of patients with specific immunodeficiencies, pulmonary or cardiac insufficiency or for patients receiving profoundly immunosuppressive treatment, if recommended by the PID expert treating physician.

The use of mAbs in patients with PID should always be the outcome of a shared decision-making process between the patient and the PID medical expert.