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COMMENTARY

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SARS-CoV-2 myocarditis in pediatric patients: We are ready to do whatever it takes to save them!

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Over the different waves of the COVID-19 pandemic, we witnessed considerable changes in the clinical profile of affected patients, with SARS-CoV-2 infection affecting mostly older and frail patients during the initial outbreak. Thanks to the efforts across any sectors and the vaccination campaigns, which allowed to reach a high vaccination coverage especially in industrialized countries, the new variants of the virus tend nowadays to affect more younger individuals; in other words, pediatric patients not yet vaccinated. Although, compared with older adults, severe COVID-19 is much less common in infants, children, and young adults, this new at-risk population involves an even more important commitment in terms of ethical considerations and allocation of biomedical resources.

However, initially healthy children who develop cardiac complications should be granted the utmost attention as well as early care and maximum health resources due to their risk profile and disease severity. In this regard, the case report by Buitrago et al.[1] represents a management model that should be pursued in these circumstances. The authors describe the case of a healthy 12-year-old female child who developed acute fulminant myocarditis with cardiogenic shock, resulting in cardiac arrest, after she had been infected with SARS-CoV-2. This case report highlights the importance of a timely and multidisciplinary approach, which proved successful in preventing a fatal outcome.

First of all, the knowledge of this possible occurrence is crucial: although myocarditis from SARS-CoV-2 infection is quite rare (<2%), its prevalence suggests that the absolute number of patients who develop this complication is indeed globally high.

Appropriate planning of ECMO implantation is extremely important for the choice of the materials necessary for extracorporeal support (e.g., cannula size depends on the child's weight) and also for the skills required (anesthesiologist, pediatrician, cardiologist, pediatric cardiac surgeon, pediatric perfusionist, etc.).

Although further data are needed to confirm the favorable outcome reported by Buitrago et al., we hope this ECMO approach in pediatric patients will achieve better results than those recorded in the adult population, managing to save these patients using veno-arterial ECMO rather than veno-venous ECMO supporting exclusively lung function and used as a rescue strategy for severe respiratory failure due to SARS-CoV-2 infection.

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