Editorial

Comment on "Design and Implementation of Cardiac Rehabilitation in Pediatric Heart Retransplantation: A Case Report"

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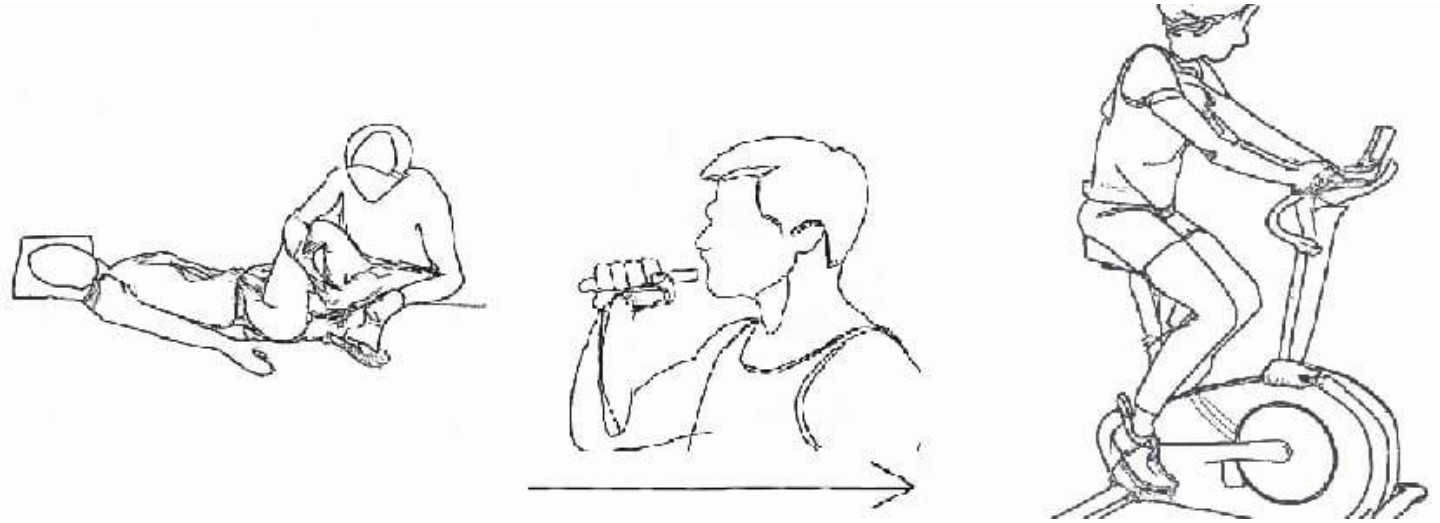

In this issue of the Heart, Vessels and Transplantation da Silva Teixeira et al. (1) presented a case of a 14 years old patient who had dilated cardiomyopathy and was treated with the heart transplantation. Two years after the procedure he required a re-transplantation. Having run six days on extracoroporeal membrane oxygenation (ECMO) before the second transplantation, and seven days on ECMO after the surgery, this patient stepped on a road of uneasy recovery. In their report, the authors detailed the approaches and techniques of the in-hospital phase of rehabilitation. The course included non-invasive ventilatory support, respiratory training, postural interventions and a vast array of passive and active exercises. Multiple scales were used for objective control of the patient's progress. Eventually, the rehabilitation program allowed to discharge the client from the hospital in a good condition and provide with the QALY (quality adjusted life-year) of 4.5.

The International Society for Heart and Lung Transplantation (ISHLT) gathers, analyzes and regularly presents global data about various aspects of organ transplantation known as reports of Thoracic Organ Transplant Registry (TTX). According to the 2021 ISHLT TTX report, now there are more than 100 worldwide centers enrolled into the TTX registry. They perform over 600 cardiac heart transplantations in children annually, with a growing tendency in the recent years (2). Apart from the increasing number, the complexity of patients is aggravating and one of such indicators is the use of ECMO and other devices for the circulatory mechanical support in the recipients. The aforementioned report stated 20%-22% of patients had been bridged with mechanical support in 2005-2008 vs 27%-36% in 2014-2017 (2). At the same time, the early survival of pediatric heart transplantations is improving steadily. The 2021 ISHLT TTX report compared the results of transplantations in previous vs current era and showed 1-year survival growth from 87% in 2000-2005 to 92% in 2012-2017 (2).

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Better transplant patient outcomes are achieved not only due to the advanced pre-operative management, improvements in surgical techniques, sophisticated post-operative intensive cardiac care and more precise immunosuppression, but also because the early rehabilitation protocols have become a must part of the multidisciplinary care.

The latter engages various assessment domains and corresponding interventions, with special focus on the most vulnerable systems, as it was with the respiratory, muscle and physical function after the ECMO decannulation in the re-transplantation case (1). Apparently, general evidence-based conclusions and pediatric cardiac transplantation rehabilitation guidelines will need to be outlined.

Albeit, currently hospitals use internal protocols typically based on personal experience, center policies, adoptions of recommendations for adults and literature data. This is why sharing even case reports on this topic, especially with challenging scenarios, is valuable and requires utmost attention.

The results of the multidisciplinary approach conducted by the authors and their team cannot be underestimated. Their rehabilitation design and the success of its implementation will be especially useful to those centers that lack their own protocols for this fragile category of patients.

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References

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