©Copyright by Croatian Cardiac Society. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (https://creativecommons.org/licenses/by/4.0/) which permits users to read, download, copy, distribute, print, search, or link to the full texts of these articles in any medium or format and to remix, transform and build upon the material, provided the original work is properly cited and any changes properly indicated.

Left ventricular assist device in a young patient with advanced heart failure

Lea Marušić*, **Tatjana Pršec**

University Hospital Centre Zagreb, Zagreb, Croatia

KEYWORDS: advanced heart failure, left ventricular assist device, destination therapy, nursing care, patient education.

CITATION: Cardiol Croat. 2026;21(11-12):374. | https://doi.org/10.15836/ccar2026.374

***ADDRESS FOR CORRESPONDENCE:** Lea Marušić, Klinički bolnički centar Zagreb, Kišpatićeva 12, HR-10000 Zagreb, Croatia. / Phone: +385-99-296-9919 / E-mail: leamarusic2005@gmail.com

ORCID: Lea Marušić, https://orcid.org/0009-0002-7855-4444 • Tatjana Pršec, https://orcid.org/0009-0004-3887-3998

Introduction: Left ventricular assist devices (LVADs) are mechanical circulatory support systems used to improve cardiac output in patients with advanced heart failure. They may serve as a bridge to transplantation, destination therapy, or a bridge to recovery. Their use requires careful patient selection and multidisciplinary management due to potential complications, including thrombosis, bleeding, infection, and right ventricular failure.[1] This case report describes the management of advanced heart failure in a young patient who underwent LVAD implantation.

Case report: 20-year-old patient from a Southeast European country was referred to our Coronary Care Unit with advanced heart failure due to biventricular dilated cardiomyopathy. The family history was notable for heart disease in the maternal grandmother. Since the beginning of the year, the patient had experienced progressive dyspnea, fatigue, and exercise intolerance, without palpitations, chest pain, or previous infections. On admission, the patient was conscious, oriented, and independently mobile. Clinical assessment revealed tachycardia and dyspnea on mild exertion, without peripheral edema. Invasive hemodynamic monitoring was initiated, together with continuous inotropic support with milrinone and other pharmacological therapies for heart failure. During hospitalization, the patient exhibited anxiety, low mood, limited verbal communication, and reduced appetite, highlighting the psychological burden associated with severe illness and the need for comprehensive patient care. Following stabilization, further cardiological evaluation was performed to determine eligibility for mechanical circulatory support. Echocardiography revealed severely impaired systolic function of both ventricles, with a left ventricular ejection fraction of 17% and elevated N-terminal pro-B-type natriuretic peptide levels, consistent with advanced cardiac dysfunction. A multidisciplinary assessment, including neurological, psychiatric, and psychological evaluations, was conducted. No contraindications to further treatment were identified. Given the severity of the disease and the need for long-term circulatory support, the patient subsequently underwent implantation of an LVAD.

Conclusion: LVAD implantation represents an important treatment option for patients with advanced heart failure. However, living with an LVAD involves numerous physical, psychological, and social challenges, particularly for younger patients. Nursing care must therefore extend beyond device management, addressing the patient's individual needs, concerns, and adaptation to a new way of life. Comprehensive education, psychological support, and preparation for independent living with an LVAD should begin during hospitalization to promote patient confidence, safety, and quality of life.

RECEIVED:
October 25, 2026
UPDATED:
November 4, 2026

LITERATURE

1. Vaidya Y, Tivakaran VS, Dhamoon AS. Left ventricular assist devices. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2026 [updated 2026 May 7]. Available from: https://www.ncbi.nlm.nih.gov/books/NBK499841/