Atrial fibrillation and vascular complications and their impact on outcome after Left Ventricular Assist Device Implantation

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Abstract

Objectives: Left ventricular assist device (LVAD) implantation is a common therapy for end-stage heart failure. LVAD patients often present with atrial fibrillation (AF). The purpose of this study was to evaluate the influence of AF in combination with vascular complications on outcome in LVAD patients. Methods: Between 01/2010 and 12/2017, 168 patients (141 male) with end-stage heart failure underwent LVAD implantation at a single center. Patient outcome was retrospectively studied using the Kaplan-Meier method for analyzing crude survival as well as Cox regression for analyzing risk factors. Results: Sixty-two patients suffered from preoperative atrial fibrillation at LVAD implantation. Mean age was 56.8 ± 11.9 years (range: 22–79) and 141 (84%) were male. Postoperatively, vascular or visceral surgical management due to malperfusion was needed in 27 patients (16.1%) and did not correlate with postoperative mortality (p=0.121, HR=1.587, CI=0.885–2.845). Patient with AF had by trend an impaired outcome in Kaplan-Meier analysis (p=0.069). Cox regression analysis revealed postoperative AF (n=53, p=0.316, HR=1.281, CI=0.789–2.079), preoperative mechanical support (MCS) [extracorporeal membrane oxygenator (ECMO), intraaortic balloon pump, Abiomed Impella® (n=74, p=0.160, HR=1.391, CI=0.878-2.206)] as no significant risk factors for death. Conclusions: Our data suggest preoperative AF may be a potential predictor of mortality and impaired long-term outcome in LVAD patients. In contrast preoperative ECLS and vascular or visceral surgery after LVAD implantation did not represent limiting factors with regard to mortality after LVAD implantation.

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