

# Mehanička cirkulacijska potpora lijevoj klijetki

## Left ventricular assist device

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Zatajivanje srca (ZS) je klinički sindrom koji nastaje kao posljedica poremećaja srčane funkcije i strukture uslijed čega dolazi do nedovoljne opskrbe tkiva kisikom i nezadovoljavanja metaboličkih potreba organizma.

Cilj ovog rada je prikazati mehaničku cirkulacijsku potporu lijevoj klijetki (engl. LVAD; *Left Ventricular Assist Device*). Mehanička cirkulacijska potpora srcu je oblik liječenja bolesnika u akutnom i kroničnom stadiju ZS s ciljem volumnog rasterećenja srca i ostvarivanja protoka krvi prema perifernim organskim sustavima održavanja minutnog volumena srca.<sup>1</sup> U svakoga bolesnika sa dokazanim ZS treba procijeniti stupanj, jer o tome ovisi izbor optimalnog liječenja i prognoza bolesnika. Selekcija bolesnika za LVAD je ključna. Iz tog razloga svi pacijenti prolaze vrlo opsežnu obradu koja uključuje niz pretraga o stanju pacijenta. Uređaj LVAD se ugrađuje kao «most» do transplantacije srca, ili kod pacijenata kod kojih je transplantacija kontraindicirana gdje je LVAD krajnja terapija, također postoji mogućnost oporavka srčane funkcije nakon ugradnje LVAD-a.

Kada se ustanovi da je pacijent pogodan za ugradnju on i obitelj prolaze edukaciju. Edukacija se sastoji od prijeoperacijskog i poslijeoperacijskog tijeka. Prijeoperativna edukacija se sastoji o informiranju pacijenta i obitelji o prednostima i rizicima postupka ugradnje. Pacijentima se približava način života nakon ugradnje, ovisnosti o uređaju, promjeni fizičkog izgleda, načinu i kvaliteti života. Prihvatanje pacijenta prije ugradnje je potrebno da bi kasnije oporavak bio što lakši. Nakon ugradnje LVAD-a pacijent je smješten u JIL-u, gdje je važno praćenje hemodinamskih parametara, parametara pumpe te pojavu znakova infekcije perkutanog kabla. Potiče se rano samozbrinjavanje.

Uloga medicinske sestre je pripremiti pacijenta za otpust iz bolnice te ga educirati o osnovnim dijelovima sustava (pumpa, upravljač sustava, baterije, modul napajanja, pacijentov kabel modula napajanja, punjač baterija), njezi izlaznog mjesta perkutanog kabla. Također, važnosti praćenja nalaza koagulacije (PV/INR), antikoagulatnoj terapiji, praćenje balansa tekućine, aktivnostima u svakodnevnom životu.<sup>2</sup> Zdravstvena njega bolesnika sa LVAD-om predstavlja izazov. Savjetodavna uloga medicinske sestre, individualni pristup te senzibilizitet za potencijalne probleme čini nas sponom između cjelokupnog medicinskog tima i pacijenta i njegove obitelji.

Heart failure (HF) is a clinical state resulting in impaired cardiac function and structural changes of the heart muscle causing an insufficient oxygen-tissue supply and metabolically impairment.

Our aim is to present and evaluate the implantation of left ventricular assist device (LVAD) from a nurse point of view. Congestive heart failure is one of the leading causes of morbidity and mortality in Europe. Left ventricular assist devices have revolutionized the treatment of end-stage heart failure. Its powerful therapeutic approach in acute and chronic heart failure is due to the fact that lowering of left ventricular volume by increasing left ventricular output increases organ perfusion, improves oxygen supply of organs by maintaining adequate minute volume.<sup>1</sup> Every patient who is suffering from heart failure should be examined by a cardiologist to evaluate the stage of heart failure and decide about adequate treatment options. Treatment modalities as well as the prognosis depends on the stage of heart failure and clinical condition. Every patient goes through an extensive diagnostic process. The left ventricular assist device has two optional implant strategies, one considering LVAD as "bridge to transplant" or "bridge to recovery" and the second considering LVAD as long term therapy.

When it is determined that the patient is suitable for LVAD implantation he and his family undergo a specific training for managing the implanted device. This training is consisted of education prior and after LVAD implantation. Prior implantation, education consists of informing the patient and his family about benefits and risks of cardiac device implantation as well as explaining what it means living with a heart pump, depends on mechanical device, everyday issues and concerns, changes in the surface of the body, dealing with cables, portable pump-batteries, possible infections and alarms, changes in quality of life and self-responsibility. After surgery patients are transferred to intensive care unit where it is important to monitor hemodynamic and pump parameters as well as signs of skin infection at the cable surrounding. After implantation of LVAD, recovery seems to depend on patients acceptance of a new body device. For better outcomes, early self-care is being encouraged.

The role of the nurse is to prepare the patient for discharge from the hospital by educating the patient about all consistent parts of the pump (control system, battery, battery charger, power supply module, driveline) and managing proper skin hygiene. Another unavoidable issue is the unceasing necessity of anticoagulant therapy (avoiding ischemic events) as well as regular coagulation and volume monitoring.<sup>2</sup> Patients healthcare, after implantation of a cardiac assist device, is nowadays still a challenging venture. The advisory role of the nurse an individual approach and sensibility for noticing and preventing potential risks makes the nurse a link between the entire medical team, the patient and his family.

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