

Rehabilitation after Left Ventricular Assist Device Implantation: How Early Can We Start?

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Background: Left ventricular assist device (LVAD) implantation is an optional therapy for patients with end stage heart failure. Physical rehabilitation after an LVAD implantation is beneficial for a patient's recovery. Our experience with very early post LVAD implantation individualized physical rehabilitation is presented.

Method: The three patients who underwent LVAD implantations between April and October 2010 were treated with physiotherapy as indicated to all open chest patients and as soon as they were able to walk by themselves (7-10 days post-op), started aerobic exercise on a treadmill, sit down bicycle, and on the Nustep: a machine that combines hand and leg aerobic exercise. Exercise was started at low intensity and for short intervals. The target was to increase intensity and volume. The rehabilitation program was developed according to the patients' physical, clinical and mental conditions. Progress was based on both subjective (Borg Scale) and objective (6 Minutes Walk Test: 6MWT) parameters.

Results: Walking time and speed on the treadmill was increased from 2-4 min to 10 min and from 1 Km/h to 1.5 Km/h respectively. The time and intensity on the Nustep increased from 1-3 min to 6-8 min and from 10-20 watts to 30 watts respectively. The time on the sit down bicycle was increased from 5 min to 10 min total. An improvement was seen in the 6MWT (Patient 1-3: 95 meters to 240 meters, 276 meters to 325 meters & 325 meters to 430 meters respectively). All patients reported improvement in carrying the 2-3 Kg of battery weight (from difficult to tolerable).

Discussion: An early stage rehabilitation program may improve the LVAD patient's functional capacity in general, and in particular, his or her comfort in carrying the LVAD batteries. Early stage rehabilitation may lead to shortened hospitalization time. Larger studies are needed to determine the optimal time to start rehabilitation program post LVAD implantation.