FIRST EXPERIENCE WITH THE SYNERGY MICRO-PUMP IN PATIENTS WITH SEVERE HEART FAILURE IN INTERMACS LEVELS 1-2: DOES IT MAKE SENSE?

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Objectives: The Synergy® Micro-pump is the smallest implantable left ventricular assist device (LVAD) which provides a partial support up to 4.25 l/min. It was shown that early intervention with this device can provide substantial benefits to patients with severe heart failure (HF) not yet sick enough for a full-support LVAD. However, due to the small incisions with no need for sternotomy and cardiopulmonary bypass it might be beneficial for selected high-risk patients. The aim of this study was to evaluate the efficiency of the Synergy® Micro-pump in patients with INTERMACS 1-2.

Methods: From February 2012 to December 2012, 10 patients with severe HF were supported with the Synergy® Micro-pump. Patients were divided into two groups according to INTERMACS 1-2 and 3-4. Patient demographics, perioperative characteristics and postoperative outcomes were compared.

Results: Five patients were in INTERMACS 3-4 (group 1) and 5 in INTERMACS 1-2 (group 2). There was no difference in patient demographics and mean support time was 204.6 ± 165.1 days in group 1 and 136.6 ± 86.5 in group 2. Also, there were no significant differences in perioperative characteristics and rate of postoperative adverse events observed. The overall survival was comparable between the groups (1 death in each group, \( P = 0.919 \)). Two patients in group 2 were upgraded to a full support LVAD (\( P = 0.444 \)) after a mean of 65 ± 84.9 days of support.

Conclusions: The use of the Synergy® Micro-pump in INTERMACS 1-2 patients is feasible and is associated with similar postoperative outcome to patients in INTERMACS 3-4. Highly selected patients with severe HF could have a benefit due to the small nature of the pump; however further studies and mid-term follow up are required.