Abstract: **P1091**

**Levosimendan for primary graft failure treatment after orthotopic heart transplantation**

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**Topic(s):**
Acute Heart Failure: Pharmacotherapy

**Citation:**
Introduction: Primary graft failure (PGF) is a life-threatening complication, and a leading cause of early mortality after orthotopic heart transplantation (OHT). PGF is defined as severely impaired systolic function accompanied by hypotension, low cardiac output, and high filling pressures occurring in the first 72 hours in the absence of hyperacute rejection and cardiac tamponade. The treatment strategies include supportive care, inotropes (catecholamines, phosphodiesterase inhibitors) and mechanical circulatory support (MCS). It is known that most inotropic agents can be associated with an increase in morbidity and mortality. Levosimendan (LS) increases cardiac contractility without increasing myocardial oxygen consumption or causing pro-arrhythmogenic effects. There is limited data of its use in after OHT.

** Purpose:** The aim of the study is to evaluate the role of LS in patients with PGF requiring MCS after OHT.

**Method:** We retrospectively analysed 153 consecutive OHT patients in our hospital from 2013 to 2018. We assessed the incidence of PGF requiring ECMO and evaluated subgroups based on LS treatment as shown in (Fig1).

**Results:** There were 40 (26.5%) cases of PGF requiring ECMO support, of whom 12 patients received LS (LS group) and 28 did not (non-LS group). The mean age at the time of OHT was similar in both groups (44 vs 44.1; p=0.985). Apart from a higher incidence of female sex in the LS group (67% vs 25% in the non-LS group; p=0.012) there were no significant differences in baseline characteristics. Fewer patients in the LS group had ECMO implanted before leaving theatre (4/12 vs 20/28 in the non-LS group; p=0.024), however over 90% of patients in each group received ECMO within the first 24 hours after OHT. Median time to the onset of LS infusion was 120 hours, (Q1-Q3: 60-230hours) from ITU admission. Successful weaning from ECMO was comparable between the groups (8/12 vs 23/28 cases in the non-LS group; p=0.283), however the duration of MCS in the LS group was significantly longer with median time of 8.18 days (Q1-Q3: 5.9-11.4) as opposed to 4.7 days (Q1-Q3:2.7-6.1) in the non-LS group (p=0.005). Although thirty-day mortality was not statistically different between the groups (6/12 vs 6/28 in the non-LS group; p=0.071), 90-day mortality was significantly higher in the LS group (10/12 vs 11/28 in the non-LS group; p=0.011).

**Conclusions:** Previously reported outcomes of LS use in the PGF post-OHT vary. We have retrospectively described our experience which shows no apparent benefits of the drug. The reasons for this may be related to 1) more severe circulatory failure compared to previously reported cases (all our patients required MCS) 2)
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Conclusions: Previously reported outcomes of LS use in the PGF post-OHT vary. We have retrospectively described our experience which shows no apparent benefits of the drug. The reasons for this may be related to 1) more severe circulatory failure compared to previously reported cases (all our patients required MCS) 2) later time to initiate MCS in the LS group 4) more severe circulatory failure in the LS group as the patients needed longer time on MCS 3) relatively late LS use in the course of circulatory failure. Further insight into the impact of LS on inotropic support and time of MCS weaning is pending.