Abstract: **P1694**

**Intermittent infusions of levosimendan in advanced heart failure: last but not least; a single-centre clinical experience on the efficacy of repeated levosimendan infusions.**

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Background: Advanced Heart Failure (AdHF) is a therapeutic challenge. AdHF patients progressively face worsening functional capacity and quality of life, recurrent episodes of congestion and related hospitalizations, in spite of maximal optimized therapy. While few are candidates for life-saving therapies such as left ventricular assist devices and heart transplant, most AdHF patients are treated with a symptom palliation strategy. Levosimendan (Levo) is a calcium sensitizer inodilator whose effects in AdHF have been evaluated in 3 trials and one registry with encouraging results. Publications in this area are limited, further trials and real-world data are needed to fully elucidate the effects of Levo.

Purpose: To retrospectively investigate the clinical, echo, lab and arrhythmic effects of intermittent Levo infusions in AdHF patients treated for at least 6 months in a real-world setting.

Methods: This is an observational retrospective study. We retrospectively collected the data of patients (29) treated with repeated Levo infusions for at least 6 months in our unit from 2006 to 2018. Most patients were treated for symptoms relief (76%), the others as a bridge to transplant/LVAD or decision (34%). Clinical, echo and lab data were recorded from medical records. Data regarding arrhythmias and ICD shocks were retrieved from device ambulatory control reports. The outcomes of the same population of patients was compared for the 6 months before levosimendan initiation and for the 6 months thereafter.

Results: Male were 73%, average age was 69 years, mean Charlson Comorbidity score was >7, cardiomyopathy was ischemic in 45% and dilatative in 35%. Levo determined an improvement in NYHA class (p=0.012), ejection fraction (28.6%±7.1 vs 22.6%±6.7, p=0.006) and pulmonary artery systolic pressure (42.2±13 mmHg vs 51.5±9 mmHg, p=0.017), and reduced BNP levels (1054±812 vs 1779±1280, p=0.017). Creatinine levels remained stable (1.96±0.8 mg/dl vs 1.88±0.8 mg/dl, p=0.593). No differences were found in sustained ventricular arrhythmias or defibrillator therapies before and after Levo (0.4 vs 0.7, p=0.5). Mitral regurgitation was >moderate in 16 patients before Levo and in 6 patients after 6 months of infusions (not significant, p=0.7). Levo significantly reduced emergency room visits (0.1±0.4 vs 1.1±1.6, p=0.02). When considering only the patients treated after 2013 (when the Italian palliative care network became operational), the in-hospital-days were significantly reduced (2.8±5.3 vs 10.7±9.4, p=0.012).

Conclusions: Intermittent Levo appears to be an effective and safe option in AdHF. It improves NYHA class and ejection fraction, reduces pulmonary systolic pressure, BNP levels, HF hospitalizations and emergency room visits. Furthermore, it seems to stabilize renal function. Reassuringly, these benefits are reached without an increase in the arrhythmic burden. In this regard, it is noteworthy that this is the first registry to use the ICD reports to investigate the arrhythmic safety of Levo.