Introduction:
VA ECMO weaning is a challenging process. The aim of the study was to evaluate the putative benefit of levosimendan, for VA ECMO weaning.

Methods:
This retrospective study, from 2014 to 2016, included patients referred to our ICU for primary cardiogenic shock or following cardiotomy, with VA ECMO in whom an attempt was made to wean mechanical support (death under VA ECMO or bridge to long-term device or transplantation were excluded). Incidence of weaning failure, VA ECMO support duration, length of stay in ICU and length of mechanical ventilation were compared in patients who received levosimendan or not in the whole population and in the post-cardiotomy sub-group. Levosimendan was used at doctor’s discretion. Independent factors associated with weaning failure were determined. Statistics were made throughout bayesian paradigm.

Results:
27 patients were included in levosimendan group and 36 in control group. In the whole population, weaning failure incidence and mortality was comparable between the 2 groups (respectively 24% vs 20%, Pr 0, 34 and 36% vs 38%, Pr=0,6). Higher assistance duration, longer stay under mechanical ventilation and longer duration of stay in critical care unit were observed in Levosimendan group. In the post-cardiotomy sub-group (table 1), weaning failure was lower in levosimendan group (12% vs 29%, Pr 0,9) and levosimendan was an independent protective factor from weaning failure (OR 0,073, Pr 0,92). Positive impact of levosimendan may be explained in part by his calcium sensitazer effect and by facilitating recovery of myocardial calcium homeostasis in postcardiotomy cardiac stunning.

Conclusion:
Levosimendan failed to reduce the incidence of ECMO weaning failure, except for post-cardiotomy population.