Category :**Cardiovascular: cardiac arrest\CPR**

A97 - ***Impact of levosimendan use on survival of patients on veno-arterial extracorporeal membrane oxygenation (va-ecmo) support***

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Introduction:

In refractory cardiogenic shock, VA-ECMO may be employed to maintain end organ perfusion. Measures to hasten weaning from VA-ECMO support are sought to minimize complications. Levosimendan is an inodilator which is shown to facilitate weaning of VA-ECMO in post cardiac surgery patients. Its benefit on patients without cardiac surgery is uncertain. We aim to study the effect of levosimendan on survival of ICU patients receiving VA-ECMO support.

Methods:

This is a retrospective cohort study carried out in the 24-bed mixed medical/surgical ICU of a regional hospital in Hong Kong from January 1, 2015, to July 31, 2021. Patients admitted for refractory cardiogenic shock or post cardiac arrest requiring peripheral VA-ECMO support were recruited.

Results:

A total of 51 patients receiving peripheral VA-ECMO support were included. Among them, 19 patients received levosimendan (LEVO), while 32 did not (control). Demographics including age, sex, medical co-morbidities, and the APACHE IV score were not significantly different between groups. Acute myocardial infarction, as the indication for ECMO (84.2% vs 46.9%, p=0.016), and the concomitant use of intra-aortic balloon pump (IABP) (78.9% vs 37.5%, p=0.008) were more commonly found in the LEVO group than the control group. The primary endpoint was 30-day mortality, which was significantly lower in the LEVO group (36.8% vs 68.8%, p=0.026). Kaplan-Meier plots showed improvement of 30-day (p=0.022) and 90-day mortality (p=0.039) for patients who received levosimendan. Statistically significant secondary outcomes included ICU mortality (31.6% vs 62.5%, p=0.033) and ICU length of stay (6.1 vs 3.3 days, p=0.032). Low total levosimendan dose, defined as less than 140mcg/kg, predicted ICU mortality (AUROC 0.885, 95% CI 0.691-1.000, p=0.009).

Conclusion:

Levosimendan use was associated with improved 30-day mortality in patients suffering from refractory cardiogenic shock or post cardiac arrest treated with peripheral VA-ECMO.