



**Service Priorities and Programmes**  
**Electronic Presentations**

**Convention ID:** 847

**Submitting author:** Ms WAN PO JOANNA LO

**Post title:** Advanced Practice Nurse, Pamela Youde Nethersole Eastern Hospital, HKEC

**Prognostic value of fluid balance in patient receiving Extra-corporeal Membrane Oxygenation**

*Lo WPJ, Shum HP, So HM, Lau YS, Wong ST, Mui SYK, Wong KP, Lau L, Kwok LPN, Chan KC, Yan WW*

*Department of Intensive Care, Pamela Youde Nethersole Eastern Hospital, Hospital Authority*

**Keywords:**

fluid balance

Extra-corporeal Membrane Oxygenation

hospital mortality

**Introduction**

Poor venous outflow from extra-corporeal membrane oxygenation (ECMO) cannula is a common trigger factor for fluid administration. However, positive fluid balance has been associated with an increased risk of mortality in critically ill patients

**Objectives**

A retrospective study assesses the relationship between fluid balance and outcomes among patients who received ECMO

**Methodology**

Patients who received ECMO for 3 days or more between January 2009 to January 2014 were reviewed. Demographics, severity of organ failure and fluid balances during ECMO treatment were recorded, Univariate and logistic regression analysis were performed to identify factors associated with hospital mortality.

**Result**

Seventy-six patients received ECMO during the study period and sixty-four of them fulfilled the inclusion criteria. Eighteen patients died and the hospital mortality rate was 28.1%. In univariate analysis, the Sequential Organ Failure Assessment (SOFA) score on initiation of ECMO ( $p=0.015$ ), ECMO type ( $p=0.050$ ), average daily fluid balance on first three days of ECMO ( $p=0.001$ ) and requirement of renal replacement therapy ( $p=0.019$ ) correlated with hospital mortality. In logistic regression, only average daily fluid balance on first three days of ECMO was independently associated with hospital mortality ( $p=0.012$ , OR 1.73 per 1L gain, CI=1.13-2.68, C-index=0.771, Hosmer-Lemeshow test  $p=0.063$ ). Positive fluid gain during first three days of ECMO was independently associated with hospital mortality. ICU nurses should meticulously take initiation to manage correctable causes of poor venous outflow from ECMO cannula first (e.g. cannula mal-positioning, elevated intra-abdominal pressure, shivering, agitated patient, etc.) and review patient's fluid status before considering

fluid administration.