Introduction
End-tidal capnometry (ETCO2) is recommended to be used during resuscitation of out-of-hospital cardiac arrest (OHCA) in the ACLS guideline for monitoring effectiveness of chest compression, confirmation of tracheal tube placement and indication of return of spontaneous circulation. There is increasing evidence that low initial ETCO2 value despite adequate chest compression predicts poor outcome (or medically futile resuscitation).

Objectives
To evaluate the prognosticating value of 3-minute ETCO2 value in a local cohort and the role in reducing medically futile resuscitation.

Methodology
This is a prospective cohort study. Data were retrieved from July 2012 to June 2013 sourced from a local Utstein style based cardiac arrest registry. Patients with non-traumatic OHCA aged above 18; with resuscitation performed in ED; and with proper documentation of ETCO2 values throughout resuscitation were included. All resuscitations were performed according to the ACLS guideline 2010 with endotracheal intubation and chest compressions. End-tidal capnometer with model Nellcor Microstream N85 were applied. ETCO2 values were recorded every 3 minutes after intubation or when there was a major change in value. The 3-minute ETCO2 referred to the value taken at 3 minutes after initiation of resuscitation in ED with quality chest compression. Primary outcome was death in the emergency department with no regain of circulation. Diagnostic characteristics of 3-minute ETCO2 on the
outcome were explored.

**Result**

Totally 319 patients were included. Among them, 211 was certified death in the emergency department (66.1%). The area under receiver-operating-characteristics curve of ETCO2 to predict outcome of death in ED was 0.803 (95% CI 0.714-0.913, p<0.001). The diagnostic accuracy of 3-minute ETCO2 ≤ 10 mmHg to predict death in ED: sensitivity 30.8% (24.7-37.6%), specificity 96.3% (90.2-98.8%), positive predictive value 94.2% (85-98.1%) and negative predictive value 41.6% (35.5-48%). 3-minute ETCO2 and other prognosticators including witnessed arrest, bystander CPR, defibrillation, and age were entered into logistic regression model for confounding control. 3-minute ETCO2 ≤ 10mmHg was an independent predictor of death in ED with odds ratio of 18.2 (95% CI 4.8-41.3, p<0.001). Conclusion 3-minute ETCO2 value ≤ 10 mmHg was associated with poor prognosis and highly predictive of death in ED. For patients with low 3-minute ETCO2 value, poor premorbid status and other poor outcome prognosticators, physicians may consider early termination of resuscitation to reduce duration of medically futile resuscitation.