cal end points. ROC curves were constructed for NSE values and both endpoints and compared at respective individual days.
Results: A total of 153 cardiac arrest survivors (mean age 64.2 years) were enrolled in the present study. The NSE levels were significantly lower in the CPC 1–2 group in comparison with the CPC 3–5 group at each time point ($P<0.05$). At all individual days with exception of Day 1 the predictive values of NSE were significantly higher for one-month outcomes than for one-year mortality (Day 1: area under the ROC curve [AUC] 0.768 vs. 0.750, $P>0.05$; Day 2: AUC 0.916 vs. 0.763, $P<0.001$; Day 3: AUC 0.968 vs. 0.802, $P<0.01$; Day 4: AUC 0.973 vs. 0.772, $P<0.001$; and for the maximal NSE values: AUC 0.951 vs. 0.847, $P<0.05$).
Conclusions: The NSE values at days 2, 3, 4 and the peak NSE were a stronger prognostic marker for the estimation of one-month clinical outcomes than for the prediction of one-year mortality.
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P4664
Lactate clearance is one of the most powerful prognostic indicators in extracorporeal cardiopulmonary resuscitation

T. Mizutani[1], N. Umemoto[1], T. Taniguchi[1], H. Ishii[2], T. Murohara[2], K. Shimizu[1].
[1]ichinomiya municipal hospital, department of cardiology, ichinomiya, Japan; [2]Nagoya University Hospital, Nagoya, Japan

Background: Serum lactate level can predict clinical outcomes in some critical cases. In clinical setting, we convinced that patients who undergoing extracorporeal cardiopulmonary resuscitation (ECPR) with poor serum lactate improvement don't recover from CPA. Therefore, we investigated the association between lactate clearance and in-hospital mortality in cardiac arrest patients undergoing ECPR.
Methods: Of the 98 patients and excluding those whose etiology was aortic dissection, 69 patients underwent ECPR after cardiac arrest. Their data including serum lactate level were retrospectively collected, and their clinical courses including after discharge were also evaluated. Serum lactate levels were measured on admission and every hour after starting ECRP. Lactate clearance [(lactate at first measurement - lactate 6 hours after) / lactate at first measurement $\times$ 100] was calculated 6 hours after first serum lactate measurement. All patients who underwent ECPR were registered retrospectively using opt-out in our outpatient's segment.
Result: In this retrospective study, 69 cases were evaluated, and the patients were classified into two groups according to lactate clearance: high-clearance group, lactate clearance$>$70%; low-clearance group, $\leq$70%. In 30 days, 5 (33.3%) and 38 (70.4%) patients in the high and low-clearance groups died, respectively (odds ratio, 5.71; 95% confidence interval, 1.73–21.2; $p<0.01$). Neurological outcome of high-clearance group is better statistical significantly better than low-clearance group. Considering other confounders, lactate clearance was an independent predictor for in-hospital mortality (odds ratio, 5.10; 95% confidence interval, 1.20–21.6; p=0.02). Both net reclassification improvement (NRI) and integrated reclassification improvement (IDI) show that adding lactate clearance on established risk factors improved the predictability of in-hospital mortality (NRI 0.65, $p<0.01$, IDI 0.08, $p<0.01$)
Conclusion: In our study, lactate clearance calculated through arterial blood gas analysis6 hours after ECPR was one of the most important predictors for in-hospital mortality in patients treated with ECPR after cardiac arrest.

P4665
Noninvasive ventilation in treatment of acute pulmonary oedema due to acute coronary syndrome; propensity score matched analysis

L. Carrillo-Aleman[1], A. Lopez Martinez[2], V. Martinez-Perez[3], P.S. Bayoumi Delis[2], J.M. Ruiz-Nodar[1], J.G. Martinez[1], D. Pascual[4], A. Carrillo Alcaraz[2].
[1]General University Hospital of Alicante, Cardiology, Alicante, Spain; [2]University Hospital Morales Meseguer, Murcia, Spain; [3]University of Murcia, Murcia, Spain; [4]Hospital Clínico Univeristario Virgen de la Arrixaca, Murcia, Spain

Introduction: Noninvasive ventilation (NIV) has shown to be effective in treatment of acute cardiogenic pulmonary oedema (ACPO), avoiding endotracheal intubation. However, its use in patients with acute coronary syndrome (ACS) is controversial.
Purpose: To analyze the evolution of patients with acute pulmonary oedema caused by ACS comparing them with those caused by other etiologies.
Method: Observational and prospective study of a cohort of patients admitted to Coronary Unit (CU), from 1997 to 2017, with acute respiratory failure due to ACPO. NIV was started if the patient had severe dyspnea, respiratory rate $>$30 breaths^{-1}, PaO2 / FiO2 $<$250 or pH $<$7.35. NIV failure is defined as need for endotracheal intubation or death in CU. We created propensity score-matched pairs (to 1: 1 match). Matching was performed using the following variables: age, gender, SAPS II severity index and maximum SOFA in the first 24 hours, history of chronic obstructive pulmonary disease (COPD) and order of no intubation.
Results: We recruited 1,318 patients with 1,350 episodes of ACPO. After propensity score-matched analysis, we compare 548 patients with ACS and 548 with other diagnoses. The comparison between variables between both groups is shown in table 1. Patients with ACS present a RR of 1.79 (95% CI: 1.41 to 2.28) for failure of NIV, and 1.51 (95% CI: 1.21 to 1.88) for hospital mortality.

Table 1

	ACS	Others ethiologies	p value
Age, years old	74.8±9.6	74.5±10.5	0.559
Diabetes, n (%)	318 (58)	288 (52.68)	0.068
Respiratory rate, min^{-1}			
At onset of NIV	37±4	37±5	0.869
After 1 hour of NIV	31±5	30±4	0.034
Hypotension at onset of NIV, n (%)	111 (20.3)	95 (17.3)	0.216
PaO2/FiO2, mmHg			
At onset of NIV	126±33	128±33	0.326
After 1 hour of NIV	160±35	167±37	<0.001
NIV succes, n (%)	397 (72.4)	464 (84.7)	<0.001
NIV related complications, n (%)	99 (18.1)	86 (15.7)	0.294
Caridogenic shock during NIV, n (%)	151 (27.6)	100 (18.2)	<0.001
CU stay, days	3 (2.6)	3 (2.6)	0.524
Hospital stay, days	12 (7.18)	13 (8.2)	<0.001
CU mortality, n (%)	129 (23.5)	68 (12.4)	<0.001
Hospital mortality, n (%)	156 (28.5)	103 (18.8)	<0.001

Conclusions: Patients with acute pulmonary oedema secondary to ACS present worse evolution and prognosis than those secondary to other causes.

ECHOCARDIOGRAPHIC ASSESSMENT OF THE RIGHT HEART

P4666
Different etiologies of functional tricuspid regurgitation are associated with significant heterogeneity in right chamber size and tricuspid valve geometry

D. Muraru[1], K. Addetia[2], A.C. Guta[3], R. Ochoa-Jimenez[4], D. Genovese[1], P. Aruta[1], S. Mihaila[3], J. Bidviene[5], V. Mor-Avi[2], A. Prado[6], S. Iliceto[1], R.M. Lang[2], L.P. Badano[1]. *[1]University of Padua, Department of Cardiac, Thoracic and Vascular Sciences, Padua, Italy; [2]University of Chicago Medicine, Heart & Vascular Center, Chicago, United States of America; [3]University of Medicine and Pharmacy Carol Davila, Bucharest, Romania; [4]University of Medical Sciences, San José, Costa Rica; [5]Hospital of Lithuanian University of Health Sciences, Kaunas, Lithuania; [6]Private Center of Cardiology, Tucuman, Argentina*

Background: Dilation of the tricuspid annulus (TA) secondary to right ventricular (RV) enlargement is considered the most important mechanism and the primary therapeutic target of functional tricuspid regurgitation (FTR), irrespective of etiology. However, the presence of significantly dilated TA in patients (pts) with normal RV and mild FTR suggests an incomplete understanding of FTR pathophysiology in its early stages.
Purpose: To evaluate the tricuspid valve (TV) geometry and its relationship with right chamber volumes in 4 main etiologies of FTR: permanent atrial fibrillation (AF), left heart disease (LHD), pulmonary hypertension (PH) and severe pulmonary regurgitation after corrected Tetralogy of Fallot (ToF).
Methods: A total of 185 FTR pts (50 AF, 46 LHD, 48 PH, and 41 ToF) and 120 healthy controls (55 AFc, 39 LHDc, 37 PHc, and 36 ToFc) were prospectively enrolled in two academic centers from Europe and US. Due to significant differences in age, gender and body size, each FTR group had to be compared with a different control group, and all parameters have been indexed to body surface area. RV end-diastolic volume (EDV) and RA maximal volume were measured using 3D echocardiography. TA area and TV leaflet tenting volume were quantified in mid-systole using validated prototype 3D software.
Results: Severe FTR was found in 26% in AF, 35% in LHD, 25% in PH and 10% in ToF pts ($p<0.01$). Based on each control group, Z-scores were computed for every parameter to allow comparison among different FTR groups (Figure). AF pts had the largest RA volumes and TA area, and the smallest TV tenting and RV EDV. On the other hand, ToF pts had nearly normal RA and TA annulus size and leaflet tenting and the lowest proportion of severe FTR, despite having the largest RV volumes among FTR groups. LHD and PH pts had largest leaflet tenting volume associated with both RV and RA enlargement, and less annular dilation than AF pts. In AF and ToF pts, TA area had a closer correlation with RA volume (r=0.68 and 0.63) than with RV volume (r=0.48 and 0.53, respectively). However, in PH and LHD pts, TA area was correlated with both RA (r=0.55 and 0.64) and RV (r=0.60 and 0.62) volumes ($p<001$).

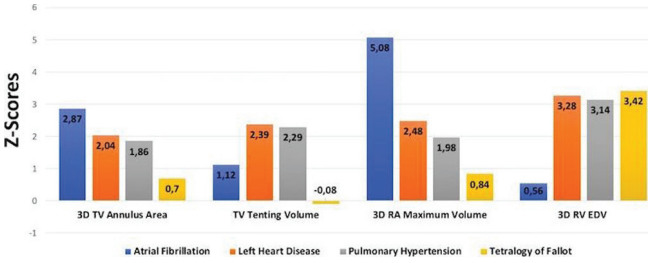

Figure 1. Z-Scores in the four FTR groups

Conclusion: Among the four main etiologies of FTR, significant heterogeneity