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ALT were > 200 UI/L. Repeated measures were analysed using two-way ANOVA. **Results:** A total of 69 patients were included; 2 patients received VA ECMO for severe ARDS associated with cardiac failure, 15 for refractory cardiac arrest and 52 for cardiogenic shock. Of them, 28 (41%) had ELE at the moment or immediately after ECMO initiation (median AST 482[345-1802] UI/L and median ALT 401 [177-1215] UI/L. There was a significant increase in PT and bilirubin and a decrease in AST over the study period, while other tests did not change significantly. PT and fibrinogen values were significantly higher in survivors (n=32) than non-survivors (n=37). Among the 28 patients with ELE, 9 had a further elevation in AST/ALT and 6 eventually died with multiple organ failure. Of the 19 patients with reduction of AST/ALT, only 7 normalized their levels within 3 days since ECMO initiation. The reduction in AST/ALT after ECMO initiation was more frequent in survivors (12/15) than in non-survivors (7/13). **Conclusions:** A substantial proportion of patients needing VA-ECMO have early ELE, which usually improves over time, especially in the survivors. PT and fibrinogen values are also higher in survivors than non-survivors. Recovery of normal liver function needed more than 3 days in most of patients.

185

GOAL DIRECTED ECHOCARDIOGRAPHY BY NON-CARDIOLOGIST IN CRITICALLY ILL PATIENTS; EGYPTIAN EXPERIENCE

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Learning Objectives: Goal directed echocardiography (GDE) done by non-cardiologist intensive care physician is a useful tool for hemodynamic monitoring in critically ill patients (1). Although many studies in literature reported the benefit of GDE in intensive care unit (ICU), its impact on patient's outcome was not reported. In this study we evaluated our experience in a surgical ICU in Cairo University with the impact of GDE on diagnosis of the cause of shock as well as the patient outcome **Methods:** All critically ill non-bleeding hypotensive patients admitted to our ICU for six months were enrolled in the study. Goal directed echocardiography (GDE) was done by 3 trained intensivists. Four views were examined in each patient; Parasternal long axis view (PLAV), Parasternal short axis view (PSAV), Apical four chamber view (A4CV), and subcostal view (SV). Two dimensional eyeballing technique was used to determine pump failure, hypovolemia, right side enlargement, and cardiac tamponade. Neither M-mode nor Doppler was used in GDE. Estimated cause of shock was reported before and after GDE as well as seven day outcome of the patients **Results:** Fifty four consecutive patients were included in the study. The estimated causes of shock before GDE were; distributive shock (53.6%), pump failure (32.1%), hypovolemia (5.4%), and obstructive shock (5.4%). After GDE; causes of shock were; hypovolemia (37.5%), pump failure (19.6%), obstructive shock (16.1%), and distributive shock (10.7%). The most clearly visualized view in this cohort was A4CV [52 cases (92%)], followed by PSAV [45 cases (80.4%)], PLAV [44 cases (78.6%)], and subcostal view [38 cases (67.9%)] GDE changed the diagnosis in 35 cases (62.5%), confirmed the diagnosis in 12 cases (21.4%) and didn't reach a diagnosis in nine cases (16.1%). Seven days mortality was lower in patients whom GDE determined the cause of shock compared to in those whom the cause of shock was not diagnosed (66.7% Vs 100%, P=0.05) **Conclusions:** GDE performed by non-cardiologists was beneficial in improving the diagnosis as well as the seven day outcome of shocked patients in the ICU

186

ASSESSING HEMORRHAGE SEVERITY WITH CONTINUOUS AUTOMATIC HEART-RATE-COMPLEXITY MONITORING IN SWINE

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Learning Objectives: Heart-rate-complexity (HRC) calculated off-line was associated with injury severity, mortality, and the performance of life-saving interventions in animal and human studies. We hypothesized that real-time automatic HRC measurements by the Aesculon monitor (Cardiotronic-Osypka Medical, USA) are associated with hemodynamic status and mortality. **Methods:** Spontaneously breathing consciously sedated swine were shed 65% of blood volume over 1 hour, then were randomized to 3 groups: control (C, n=7); transfusion of shed blood (TSB, n=7); or endovascular balloon occlusion of the aorta (REBOA) (Pryor Medical, Arvada, CO) for up to 60 minutes followed by TSB (n=21). Epinephrine boluses were given if mean arterial pressure (MAP) < 40 mmHg in the TSB and REBOA groups. After resuscitative interventions, animals were followed for 240 min or death. Aesculon monitor performed continuous, real-time measurements of HRC, i.e. sample entropy (SampEn) and multiscale entropy (MSE). At 30 minutes after all interventions, heart rate (HR), MAP, Lactate (Lac), and HRC metrics were assessed for their association with death using logistic regression and receiver-operating-characteristic (ROC) curve analysis. **Results:** All animals died in group C, 2/7 in group TSB, and 1/21 in group REBOA. SampEn and MSE decreased with hemorrhage and increased after interventions (TSB or REBOA+TSB). After resuscitative interventions, HRC metrics individually were associated with death: SampEn p=0.0002, area under the curve (AUC) =.88; MSE p=0.002, AUC=.83; both SampEn and MSE together p=0.0005, AUC=.90. Traditional vital signs were also associated with death: HR, p=0.02, AUC .72; MAP, p=0.01, AUC .85; Lac p=0.05, AUC=.69; and for all three metrics together p<0.03, AUC=0.85. When traditional and HRC variables were combined into a single model the overall AUC was .93, p=0.003. **Conclusions:** Real-time unsupervised calculation of HRC by the Aesculon monitor improves diagnosis of hemorrhage severity and is significantly associated with mortality in a model of non-compressible hemorrhage treated with REBOA.

187

ECG STUDY IN ICU PATIENTS: QTc INTERVAL.

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Learning Objectives: Causes of prolonged QT interval corrected (QTc) which is calculated by Bazett's Formula, include cardiomyopathy, severe bradycardia, high-grade AV block, anti-arrhythmics, hypothyroid and hypothermia. Normal QTc ≤ 440 msec. The aim of our observation retrospective study was to test the hypothesis that a correlation and a shift exists in QTc interval in ICU patients on admission and discharge ECG, in our both medical and surgical ICU served in community hospital. **Methods:** From October to December 2013 we looked for QTc (ms) in ECG automatically analyzed on admission and discharge in 48 ICU patients who survived ICU. We looked for statistical significant difference (p value two tailed) between the mean values of admission and discharge, using the unpaired Mann - Whitney test (nonparametric) or the unpaired t test Welch corrected (parametric), according to the normality test, which was obtained using Kolmogorov - Smirnov method. Using linear correlation method, we looked for linear slope, correlation coefficient (r), and coefficient of determination (r²), and by linear regression method using ANOVA test we looked for p value according QTc interval on admission and discharge. **Results:** Comparison between QTc values on admission and discharge (I) Mean: 443.21 / 426.84, St Dev: 32.09 / 28.34, St Error: 4.73 / 4.17, Min: 383 / 372, Max: 529 / 510, Lower C.I: 433.68 / 418.42, Upper C.I: 452.76 / 435.27, p value: 0.0023 Correlation between QTc values on admission and discharge: Slope: 0.315, St Error: 0.124, r: 0.35, r²: 0.127, Lower C.I: 0.064, Upper C.I: 0.566, p value:0.0149 **Conclusions:** According to our data, there was statistically very significant difference detected in QTc interval between admission and discharge, by means that QTc interval on discharge was lower. On the other hand there was statistical significant, moderate positive linear correlation between QTc interval on admission and discharge. Our data suggest that QTc interval in our ICU patients shifted to lower values on discharge, assuming that causes of QTc interval variation on admission were solved during ICU hospitalization.

Poster Session: Cardiovascular 5

188

THE PREVALENCE OF CHRONIC ATRIAL FIBRILLATION: PRE-OPERATIVE FACTORS ASSOCIATED

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Learning Objectives: The objective of our study is to identify risk factors associated with the increase in the prevalence of pre-operative chronic atrial fibrillation in patients subjected to cardiovascular surgery. **Methods:** A retrospective study of patients admitted to our intensive care unit between 2009 - 2012. Exclusion factors: none. Variables analysed: sex, age, ICU and hospital mortality. Type of surgery: bypass, coronary artery, valve replacement (isolated, double or combined with a bypass, or aortic tube). Scores gravity (APACHE II, Charlson Index and