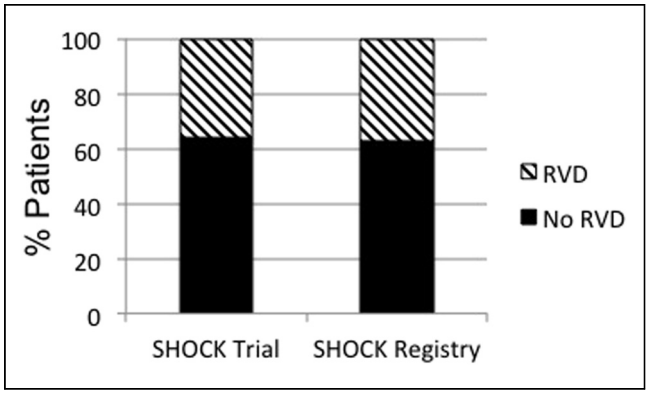
METHODS Hemodynamic data were available for 140/302 patients in the SHOCK trial and 260/1189 in the SHOCK registry. We explored the number of patients meeting criteria for RVD as defined by: CVP>10mmHg, CVP/PCWP>0.63, PAPi<2.0 and RVSWI<450 mmHg·mL/m2. Next, we explored the number of patients who met the RR-RVF criteria in the trial and registry. Finally, we examined whether RVD or the RR-RVF criteria were associated with 30 day mortality.

RESULTS RVD was observed in 37% and 36% of patients in the SHOCK trial and registry respectively. RR-RVF criteria were observed in 45% and 38% of SHOCK trial and registry patients respectively. Among trial patients, RR-RVF criteria were not associated with increased 30-day mortality. Among registry patients, 30 day mortality was higher among patients who met RR-RVF criteria compared to those who did not (58% vs 44%, p=0.03). RR-RVF criteria were associated with a hazard ratio of 1.46[1.03-2.07] (p=0.04) for 30-day mortality among registry subjects.



CONCLUSIONS RVD was commonly observed among patients in the SHOCK trial and registry. The RR-RVF criteria were associated with increased 30-day mortality in both the SHOCK trial and registry. These findings suggest that univentricular shock is uncommon in AMI-CS. Early recognition and aggressive management of RVD may improve clinical outcomes in AMI-CS. Future studies are required to further explore the potential clinical utility of the RR-RVF criteria.

CATEGORIES CORONARY: Hemodynamic Support and Cardiogenic Shock

KEYWORDS Acute myocardial infarction, Cardiogenic shock, Right Ventricular Failure

TCT-197

Abstract Withdrawn

TCT-198

Assessment Of Aortic Valve Location On Supine Chest X-ray. Applicability Of The Aortic Valve Location Ratio For Assessment Of Intra-cardiac Assist Device Position

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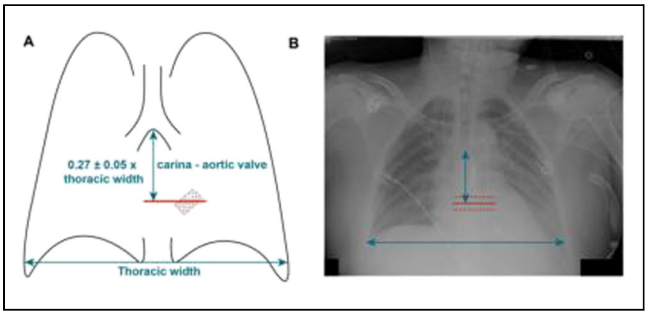
BACKGROUND The use of intra-cardiac assist devices is expanding and correct position of these devices is required for optimal functioning. The aortic valve is an important landmark for positioning intra-cardiac assist devices. It would be of great value if the device position could be determined accurately by plain supine chest X-ray. We aimed to introduce a ratio for determination of the aortic valve location on plain supine chest X-ray images in the intensive care unit.

METHODS Supine anterior-posterior chest X-ray of patients with an aortic valve prosthesis (n=475) were analyzed to determine the location of the aortic valve using the Aortic Valve Location (AVL) ratio. The AVL ratio was validated using computer tomography of patients with angina pectoris without known valvular disease (n=95). The position of a Impella device was determined on chest X-ray and compared to echocardiographic images (n=34).

RESULTS The AVL ratio determines the location of the aortic valve caudal to the carina, at a distance of 0.27±0.05 times the thoracic width. When the AVL ratio is used for assessment of the position of a cardiac assist device it shows a good correlation with echocardiography.

CONCLUSIONS The Aortic Valve Location Ratio enables accurate and reproducible localization of the aortic valve on supine chest X-ray. This tool is easily applicable and can be used for assessment of cardiac device position in patients on the Intensive care unit.



CATEGORIES CORONARY: Hemodynamic Support and Cardiogenic Shock

KEYWORDS Aortic valve, Imaging, Impella

TCT-199

A Comparative Analysis Of Use Of Extracorporeal Membrane Oxygenation And Peripheral Ventricular Assist Device TandemHeart In Acute Myocardial Infarction

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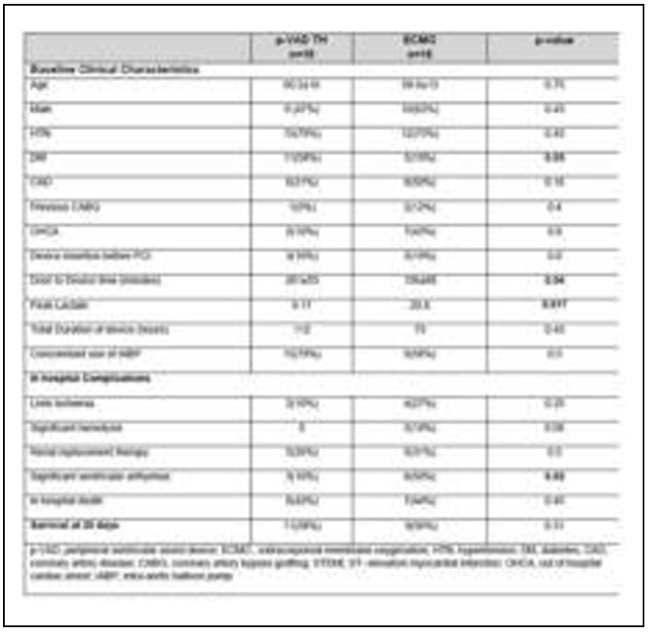
BACKGROUND Refractory cardiogenic shock (RCS) in acute myocardial infarction (AMI) is associated with high mortality rates. Impella and intra-aortic balloon pump (IABP) provide only limited left ventricular (LV) support. Veno-arterial Extracorporeal membrane oxygenation (VA-ECMO) and peripheral ventricular assist device, TandemHeart (p-VAD), have been claimed to provide superior LV support. However, limited data exists on the outcomes of VA-ECMO and p-VADs in this specific population. This study aimed to compare VA-ECMO and p-VAD in patients presented with RCS complicated by AMI.

METHODS Using prospective registries, we identified patients undergoing VA-ECMO or p-VAD placements for an indication of AMI with RCS. Clinical, procedural and clinical outcomes data were recorded for both groups. A comparative analysis of use of these two devices in AMI was performed.

RESULTS In the study there were 35 patients who presented with RCS. 16 patients were assigned to VA-ECMO and 19 to p-VAD. Baseline clinical characteristics were similar between the groups except for higher incidence of diabetes (58% vs. 9%, p=0.03) in the p-VAD group. Door to device time was also longer in the p-VAD group. Overall the survival rate in hospital (58% vs.56%, p=0.45) and at 30 days (58% vs. 56%, p=0.3) were similar in both groups. There was no significant difference in the incidence of complications including limb ischemia requiring surgery, significant hemolysis, need for renal replacement therapy, stroke or recurrent myocardial infarction between the two

groups. However, there was a higher incidence of ventricular arrhythmias in the VA-ECMO group (16% vs. 50%, p=0.02).

CONCLUSIONS Both VA-ECMO and p-VAD had similar survival and complication rates when used in patients presenting with RCS in AMI. Choice of device in these patients should be based on operator expertise and center's resources.



CATEGORIES CORONARY: Hemodynamic Support and Cardiogenic Shock

KEYWORDS Cardiogenic shock, Extracorporeal membrane oxygenation, TandemHeart

TCT-200

ECMO for hemodynamic support in patients with profound cardiogenic shock: experience and outcomes from a large single center

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BACKGROUND We sought to evaluate the outcomes of ECMO in a variety of clinical settings among patients presenting in cardiogenic shock and/or respiratory failure and underwent emergent venous-arterial (VA) ECMO and/or venous-venous (VV) ECMO placement.

METHODS We retrospectively analyzed data from 163 consecutive ECMOs (21 VV and 142 VA) at the MH CAHF from 2012 to 2014. Mortality and morbidity at discharge were analyzed in relationship to type of ECMO support VA vs VV.

RESULTS Overall ECMO survival rates at discharge was 40%, however significant difference in terms of mortality and morbidity was observed between VA and VV groups. In the VV group the median age was 50 years (IQR 23,57), average length of stay was 33 days (IQR 22,48) median length of support was 8 days (IQR 3,20). VV mortality was 19% (4 cases). Causes of death were stroke in 1 patient and multiorgan failure in 3 patients and death occurred after 2, 29,24,35 days, respectively, after ECMO implantation. Respiratory failure due to H1N1 led to ECMO implantation in 4 cases and caused the demise of 2 patients (50% mortality). No hypothermia protocol was utilized. Vascular complications related to access were reported in 5% of the patients. Stroke prevalence was 14% and led to patient demise in 1 case. The longest length of support with successful weaning was 31 days. In the VA group the median age was 61 years (IQR 48,70), average length of stay was days 16 days (IQR 7,34) median length of support was 4 days (IQR 1,7). VA mortality was 65%. Refractory cardiogenic shock was the leading indication to ECMO implantation, however ECMO was utilized also as bailout strategy in the context of intraprocedural complications during TAVI in 10 cases, with a 30% mortality (3 deaths in 10 cases). Hypothermia protocols were utilized in 20% of the cases. Stroke prevalence was 16%. The longest length of support with successful weaning was 192 days, the oldest patient to survive ECMO was 91 years old and median age of patients who survived ECMO was 62 years (IQR 49,70).

CONCLUSIONS This is a large data series collected from a single center over the last two years. These results provide additional evidence to support ECMO as a valid option for hemodynamic support in patients of a selected age group presenting with profound cardiogenic shock and respiratory failure.

CATEGORIES CORONARY: Hemodynamic Support and Cardiogenic Shock

KEYWORDS Cardiac shock, Cardio-vascular support device, Extracorporeal membrane oxygenation

TCT-201

High Risk PCI with Modified Circulatory Support (Mini-system) with Fully Percutaneous Solution

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BACKGROUND Catheterization techniques can offer percutaneous way of coronary revascularization (PCI), in complex coronary lesions. In cath-lab we are able to perform high risk procedures, but we are still limited with circulatory failure at time of PCI. Commercial circulation supports (Impella®, TandemHeart® or ECMO) are expensive. We decided to develop cheap, fully percutaneous and easy to use way of circulatory support for backup at high risk PCI for conscious patients.

METHODS We modified standard tubing set for open extracorporeal circulation, we get out of the tubing kit venous reservoir and connect it only for priming, deairing system and for getting volume. Femoral artery was pre-closed by 2x ProGlide sutures and cannulated with 18 F cannula, femoral vein was cannulated with 20-22 F cannula. Blood from right atrium was drawn to the centrifugal pump, continue to the oxygenator and through arterial filter back to femoral artery (Image). UFH was given and circulation started at ACT 400 sec. For PCI we used contralateral groin, pressure was recorded from sheat sideport. At the end UFH was reversed to ACT 250 sec, arterial puncure was closed with sutures, venous with manual compression.