pump failure, arrhythmia), the predicted ability of PLVP to maintain a sufficient circulation was confirmed clinically: Patients with ventricular fibrillation or complete AV block (figure) without escape rhythm remained awake and had a mean arterial pressures >50mmHg solely due catheter-based support.
Conclusion: In severe cardiogenic shock, computational disease modeling and clinical observation support the efficacy of a percutanous left ventricular axial pump. Particularly where the IABP typically fails, new percutaneous devices give the patient an additional window of opportunity.

3592 ECMO-assisted resuscitation provides improved survival in the treatment of hypothermia-induced cardio-circulatory arrest

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Purpose Despite introduction of extracorporeal-assisted rewarming in accidental hypothermia, survival of patients is still very poor. Aim of this study was to evaluate predictors for survival after hypothermia-induced cardio-circulatory arrest.
Methods A consecutive series of 57 patients with hypothermia-induced cardio-circulatory arrest were admitted to the Medical University Innsbruck between 1987 and 2005. Thirty-four patients (59.6%) were resuscitated by extracorporeal circulation (ECC) and 23 patients (40.4%) by extracorporeal membrane oxygenation (ECMO). At admission, 30 patients (52.6%) had asystole, 24 (42.1%) had ventricular fibrillation and 3 (5.3%) had extreme bradycardia. Hypothermia was caused by avalanche in 22 patients (38.6%), by drowning in 21 (36.8%), exposure to cold in 8 (14.1%) und crevasse in 6 patients (10.5%).
Independent predictors for survival of hypothermia-induced cardio-circulatory arrest were assessed by multivariate logistic regression analysis.
Results Mean age of patients was 31 ± 16 years, mean body core temperature at admission was 24.6 ± 3.7°C and mean burying/submersion time was 69.7 ± 61.8 min. At admission, mean lactate was 120.4 ± 60.4 mg/dl, mean potassium level was 7.5 ± 4.0 mmol/l, mean pH was 6.7 ± 0.3. A sinus rhythm could be re-established in 31 patients (54.4%). Weaning from the assist device was possible in 30 patients (52.6%). A total of 11 patients (19.3%) survived hypothermia in the long term follow-up. In multivariate analysis, ECMO assisted resuscitation was an independent predictor for improved survival (Odds Ratio (OR): 7.7, 95% Confidence Interval (CI):1.2-49.3, p=0.032). Asphyxia-related cause of hypothermia (either avalanche or drowning) was the most predictive adverse factor for survival (OR: 0.11, 95% CI: 0.015-0.76, p=0.026). Potassium and pH at admission failed to show statistical significance in the multivariate statistical analysis.
Conclusion Beyond initial resuscitation, cardio-circulatory support by ECMO enables the treatment of severe multi-organ-failure and reperfusion pulmonary edema after cardio-circulatory arrest. Compared to ECC, ECMO-assisted resuscitation significantly improves survival in hypothermia patients.

3593 Clinical outcome of patients after successful cardiopulmonary resuscitation and an early invasive strategy with acute coronary syndromes

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Purpose: In recent years an early invasive strategy for patients with acute coronary syndromes (ACS) has been established. However, little data are available on the clinical outcome of patients admitted after successful cardiopulmonary resuscitation treated with an early invasive therapy. Therefore, the aim of the study was to investigate clinical characteristics and the long-term prognosis of resuscitated patients.
Methods: We included 1254 consecutive patients (379 females, age 64±12 years) from April 2003 till March 2005 who were referred for primary PCI (STEMI) or early invasive diagnostic (NSTE-ACS) within 48 hours after the index event. Follow up data after 6 months were available for 1178 patients (94%).
Results: 63 patients (5.0%) of the study population were admitted after successful cardiopulmonary resuscitation (14 females, 22.2%). Resuscitated patients were 61.9±10.3 years old without significant difference compared to the entire study population. The final diagnosis was NSTEMI in 15 patients (23.8%) patients, STEMI in 38 patients (60.3%), and other in 10 patients (15.9%). In 8 patients (12.7%) coronary artery disease (CAD) could be excluded, 22 patients (34.9%) had 1-vessel CAD, and 33 patients (52.4%) multi-vessel CAD. The extent of CAD did not differ from the entire population (p=0.76). Likewise, there was no difference in the frequency of prior myocardial infarction, PCI, and CABG, respectively. The time from onset of symptoms, either angina or cardiac arrest to admission was 2.1 hours (IQR 1.5-4.8) in comparison to 5.8 hours (IQR 2.7-13.2) for non-resuscitated patients (p<0.01). At admission the cardiac biomarkers troponin T, CK-MB, myoglobin and BNP were significantly higher in resuscitated patients than in the entire population despite the shorter time until admission. The all-cause mortality after six months was 34.9% in resuscitated patients compared to 3.9% in the entire population (p<0.01). The ejection fraction at follow-up after six months was significantly lower in patients after resuscitation (46.9±12.2% vs. 52.9±10.0%, p<0.01).
Conclusions: Our results indicate that patients after successful CPR benefit from an early invasive strategy. The long-term mortality rate in these patients was remarkably lower than in previously published studies.

3594 New insights in the management of cardiogenic shock complicating myocardial infarction. Role of urgent heart transplantation

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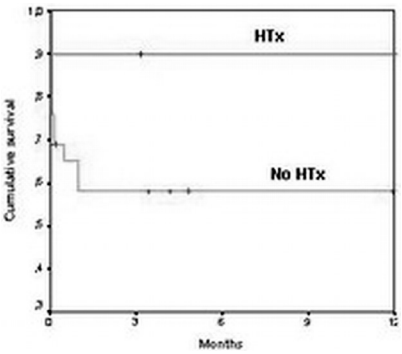
Background: Timely percutaneous coronary intervention (PCI) improves prognosis of patients with cardiogenic shock (CS) complicating acute myocardial infarction (AMI). However, lack of myocardial reperfusion despite successful PCI still encompasses high mortality rates. The impact of heart transplantation (HTx) in this setting has not been analysed.
Objectives: We sought to assess the role of HTx in the management of AMI patients complicated by refractory CS after PCI. The primary end-point of the study was mortality at one year follow up.
Methods: Between January of 2001 and December of 2005 a total of 39 patients qualified for the study, as they presented with refractory CS unsuitable for surgical revascularization and no contraindication for HTx (age<65, no comorbidities). Compatible donors could be recruited for 10 patients and they underwent urgent (within 10 days) HTx. The remaining 29 patients served as controls. The two groups were well balanced in terms of age (49 vs. 52 years, HTx vs. no HTx), number of diseased vessels (1.9 vs. 1.6), pulmonary capillary wedge pressure (23 vs. 21mmHg), cardiac index (2.2 vs. 2.4 L/min/m^2) and left ventricular ejection fraction (22% vs. 29%).
Results Mortality rates were significantly lower in the HTx group, both in hospital (10% vs. 44.8% p<0.048) and at 1 year (10% vs. 48.3% p<0.032). Survival among patients alive at hospital discharge were 100% in the HTx group vs. 93.8% in the no HTx group). The figure represents the Kaplan-Meier survival curve according to treatment.



Conclusion: Urgent HTx dramatically improves survival of AMI patients presenting with refractory CS despite early PCI. Therefore, this approach - when ever feasible- needs to be considered in the management o this particular subset of patients.

3595 In hospital results of primary PCI in ST-elevation myocardial infarction complicated by out-of hospital cardiac arrest

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Aim: the aim of the study is to evaluate in hospital outcome of patients (pts) with ST-segment elevation myocardial infarction (STEMI) complicated by out-of hospital cardiac arrest, treated with primary coronary intervention (PPCI).
Matherials and Methods: in LombardIMA registry we have prospectively collected data on 2396 consecutive pts treated with PPCI in a northem region of Italy from January to December 2005. Immediate angiographic and clinical results of 78 pts presenting with out-of hospital cardiac arrest and successfull cardiopulmonary resuscitation (group 1) were compared with those of 2318 pts without cardiac arrest (group 2) treated in the same period.
Results: baseline clinical and angiographic features and procedural results are listed in table I. In hospital mortality was significantly higher in group 1 pts (18% vs 3%; p<0.0001); ischemic cerebrovascular accidents (CVA) occurred in 9% of group 1 vs 0.3% of group 2 patients (P<0.0001). In patients with out-of hospital cardiac arrest, 21% of total mortality was related to complications of postanoxic neurological damage. Urgent revascularization (PCI/CABG) rates did not differ significantly between groups (1.2% group 1 vs 1.7% group 2; p=0.8) as well as major bleedings (1.2% vs 0.8%; p=0.6).