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Gender related differences in long-term outcomes of acute heart failure patients from different geographic regions
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Introduction: The association of gender and long-term outcomes in patients (pts) with acute heart failure (AHF) is not fully understood. Recent data from national registries suggest that outcomes might vary in men and women, however, a direct comparison among different geographic regions of the world is lacking.

Purpose: The aim of this study was to evaluate the association of gender and one-year all-cause mortality in AHF pts in various regions of the world.

Methods: We analysed 21 297 patients presenting with AHF to the emergency department (ED), who were included in the GREAT (Global Research on Acute Conditions Team) registry. Patients were followed up for all-cause mortality at 1 year. Hazard ratios (HR) were calculated using a Cox proportional hazards regression model with and without adjustment for the baseline covariates (age, gender, body mass index, systolic blood pressure, heart rate at admission, creatinine, sodium, hemoglobin, history of diabetes, hypertension, chronic obstructive pulmonary disease, coronary artery disease, coronary artery bypass grafting, atrial fibrillation, hospital length of stay, left ventricular ejection fraction<40%).

Results: There were 5543 (26%) patients from Western Europe (WE), 5813 (27%) pts from Central Europe (CE), 806 (4%) pts from America (US) and 9135 (43%) pts from East Asia (EA). 44.1% of all pts were women. The mean age was 71.6 (13.6) years (75.1 (12.7) for women, 68.8 (13.7) years for men, p<0.001). Unadjusted 1-year mortality in the whole cohort was 26.2% (26.5% for women, 20.6% for men, p<0.04). Unadjusted 1-year mortality in WE was 30.0% (men 30.6%, women 29.4%, p=0.378), in CE 33.3% (33.0% vs 33.8%, p=0.531), in US 36.7% (33.2% vs 41.0%, p=0.087), in EA 18.9% (18.1% vs. 16.6%, p=0.599) (p<0.001). After adjustment for covariates in each geographic region, women had lower 1-year mortality rates in EA (HR 0.763 [0.677-0.873], p<0.001), but not in WE and CE (HR 0.858 [0.587-1.253], p=0.088 and 0.977 [0.856-1.112], p=0.727 respectively) or US (HR 1.14 [0.836-2.464], p=0.228).

Conclusions: In AHF pts presenting to the ED, women have a lower 1-year mortality than men in East Asia, but not in Europe or America. Significant geographic and gender differences in patient outcomes warrant further research aiming at understanding these differences. Our findings might also have implications for the design of future global clinical trials in the field of AHF.

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The results of V-A-ECMO therapy in patients after out-of-hospital-cardiopulmonary resuscitation in terms of a rescue approach - a single-center experience

Background: In patients with cardiogenic shock, veno-arterial extracorporeal membrane oxygenation (V-A-ECMO) lead to stabilization through transient replacement of the cardiac function. Ensourcing published results indicating an improvement of outcome.

Purpose: This study analyzed the V-A-ECMO as a rescue approach in patients with out-of-hospital-cardiac arrest (OHCA) admitted under cardiopulmonary resuscitation (CPR) in the catheterization laboratory.

Methods: Between January 2012 and July 2016, 40 patients with OHCA and ongoing CPR or return of spontaneous circulation (ROSC) with severe refractory cardiogenic shock in the catheterization laboratory and V-A-ECMO treatment were included in the study. Decision for V-A-ECMO implantation was left to the discretion of the interventional operator.

Results: Most frequent reasons for CPR-condition were myocardial infarction in 24 (60%), ventricular arrhythmias in 7 (17.5%) and pulmonary embolism in 3 (7.5%) patients. Ventricular fibrillation (n=21, 52.5%) and asystole (n=15,12.5%) were the most prevalent initial rhythms. In 32 (80%) patients, the CPR-situation occurred under observation. In 12 (30%) patients lay-CPR and in 10 (25%) a CPR by a medical trained person was performed. The mean no-flow-time was 3.7 minutes with a maximum of 20 minutes and a mean total CPR-time of 47 minutes with a maximum of 90 minutes. ECMO implantation was performed by percutaneous femoral approach in all patients. In 28 (70%) patients antegrade limb perfusion was introduced. Almost two thirds (62.5%) of the patients showed significant coronary stenoses with indication for percutaneous coronary intervention (PCI). PCI was successful in 24 (60%) patients. Mean time of V-A-ECMO therapy was 49h, with a maximum of 264h. Under ECMO-therapy, local complications at the puncture site were found in 11 (27.5%) patients and required surgical treatment in 8 (20%) patients. Relevant hemolysis appeared in one patient. Local or diffuse bleeding occurred in 16 (40%) patients. In total 31 (77.5%) patients needed blood transfusion. Patient recovery was further complicated by acute renal failure in 19 (47.5%) patients. Laboratory findings indicated systemic inflammatory reaction in 14 (35%) patients. Overall, 12 (30%) patients underwent successful ECMO-weaning. However, 30-d-survival rate was 20% (8). Among these patients, 3 (7.5%) stayed impaired by distinct neurological deficit, whereas 5 (12.5%) had a good outcome. Analysis of parameters with relevance concerning outcome revealed a ROSC before ECMO-implantation as a relevant predictor for 30-d-survival.

Conclusion: Combined mycardial upregulation of SERPINA3 and ST2 expression in patients with heart failure due to idiopathic cardiomyopathy
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Background: Prognostic stratification in heart failure (HF) remains challenging. We previously detected mycardial upregulation of SERPINA3 and ST2 in patients with advanced congestive cardiomyopathy (CCMP).

Purpose: To evaluate the relationship between myocardial LV SERPINA3 and ST2 expression and survival in patients with CCMP.

Methods: LV message levels (qRT-PCR, rel units) were investigated in non-survivors vs survivors (10.99±24.22 vs 0.72±0.81, p<0.01 and 2.44±3.80 vs 0.36±0.22, p<0.001) in myocardial infarction in patients with OHCA. The use of V-A-ECMO in patients with OHCA is an appropriate way to reach initial hemodynamic stabilization in rescue situations. Nevertheless, the rate of complete cardiopulmonary and neurological recovery remains low. Thus, a distinct characterization of patients who can profit of this therapy seems pivotal.

Conclusion: Combined mycardial upregulation of SERPINA3 and ST2 is associated with poor survival in CCMP patients. Further prospective studies should determine whether tissue myocardial profiling may be of added value in prognostic stratification in heart failure in addition to conventional analysis of circulating biomarkers.

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Myocardial SERPINA3 and ST2 transcripts and survival in patients with heart failure due to idiopathic cardiomyopathy
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Background: Prognostic stratification in heart failure (HF) remains challenging. We previously detected myocardial upregulation of SERPINA3 and ST2 in patients with advanced congestive cardiomyopathy (CCMP).

Purpose: To evaluate the relationship between myocardial LV SERPINA3 and ST2 expression and survival in patients with CCMP.

Methods: LV message levels (qRT-PCR, rel units) were investigated in non-survivors vs survivors (10.99±24.22 vs 0.72±0.81, p<0.01 and 2.44±3.80 vs 0.36±0.22, p<0.001) in patients with OHCA. The use of V-A-ECMO in patients with OHCA is an appropriate way to reach initial hemodynamic stabilization in rescue situations. Nevertheless, the rate of complete cardiopulmonary and neurological recovery remains low. Thus, a distinct characterization of patients who can profit of this therapy seems pivotal.

Results: Significant upregulation of LV ST2 and SERPINA3 transcripts was seen in non-survivors vs survivors (10.99±24.22 vs 0.72±0.81, p<0.01 and 2.44±3.80 vs 0.36±0.22, p<0.001) survival rate in patients with both high SERPINA3 and ST2 expression was significantly lower vs other combinations of transcript levels (Figure). No significant difference was seen between the circulating proBNP and ST2 serum levels among all subgroups.

Conclusion: Combined mycardial upregulation of SERPINA3 and ST2 is associated with poor survival in CCMP patients. Further prospective studies should determine whether tissue myocardial profiling may be of added value in prognostic stratification in heart failure in addition to conventional analysis of circulating biomarkers.

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Cardiac sympathetic nerve activity is independently associated with renal function in patients with heart failure
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Background: As with cardiac sympathetic nerve activity (CSNA), glucose tol-