

424.6pg/ml, $P < 0.001$) was decreased by 60.5%. Only one patient had a sudden cardiac death at discharge. There were no death and two readmission (2.5%) for heart failure in first month. There were 1 death (1.2%) and 10 HF-related rehospitalizations (12.2%) in 3 months.

CONCLUSIONS TEB therapy can reverse cardiac remodeling, diminish the cardiac chambers, improve the myocardial contractility, and reduce the short-term mortality and rehospitalization rate. The high thoracic epidural blockade therapy in chronic heart failure is effective and safety and to be worth spreading and further research.

GW27-e1005

Liberal versus restricted fluid administration in heart failure patients: a meta-analysis of 6 randomized trials

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OBJECTIVES International guidelines have recommended fluid restriction for patients with chronic heart failure (CHF). However, this recommendation lacks scientific evidence. This study sought to evaluate effect of fluid restriction on patients with heart failure in randomized controlled trials.

METHODS Randomized controlled trials were identified in MEDLINE, EMBASE, and Cochran data base by using the search-keyword of fluid and heart failure. The liberal fluid intake and restricted fluid therapy was compared in heart failure patients. The risk ratio (RR) and mean difference (MD) were calculated from abstracted data. The studies focused on decompensated heart failure were separated from compensated heart failure as a sensitivity analysis.

RESULTS 6 randomized trials were included. Between liberal and restricted fluid groups, there was no difference in readmission (RR=1.32; 95% CI: 0.86 to 2.01; $p=0.2$), mortality (RR=1.50; 95% CI: 0.87 to 2.57; $p=0.14$), perceived thirst (MD=-0.7; 95% CI: -2.58 to 1.17; $p=0.46$), duration of intravenous diuretics (MD=0.17; 95% CI: -1.26 to 1.6; $p=0.81$) and serum sodium (MD=-1.61; 95% CI: -3.28 to 0.07; $p=0.06$). With significant heterogeneity in those trials, the pooled MD of creatinine and BNP in the liberal versus restricted fluid group was 0.20 (95% CI: 0.15 to 0.25; $p < 0.00001$) and 172.59 (95% CI: 67.38 to 277.8; $p=0.001$) respectively. All endpoints showed no difference between liberal and restricted fluid groups without heterogeneity after removing the study that recruited patients with severe impairment of left ventricular ejection fraction (LVEF).

CONCLUSIONS Compared with liberal fluid intake, restrictive fluid prescription did not show more benefit for patients with heart failure, especially for those without severe impairment of LVEF. However, the total sample size for each outcome measured was too small to detect true differences between groups.

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Clinical Characteristics, Etiology, Co-morbidities, Treatment, and Outcomes of Hospitalized Patients With Heart Failure in South China

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OBJECTIVES Few studies focus on the epidemiology of Hospitalized Heart Failure in South China. We compared the characteristics, etiology, co-morbidities, treatment, and outcomes in heart failure (HF) patients with reduced ejection fraction (EF) versus HF patients with preserved EF.

METHODS This is a retrospective observational study enrolled 1182 hospitalized patients (mean age: 64.5 ± 14.6 years; female: 39.2%) with heart failure from April 7, 2011 to July 11, 2015 in NanFang Hospital, Southern Medical University. An average of 2.15 years of follow-up was performed among the 927 (82.3%) patients.

RESULTS Compared with reduced EF group (EF $\leq 40\%$, $n=351$), HF patients with preserved EF (EF $> 40\%$, $n=831$) were more likely to be older, female. Coronary artery disease (33.2%) was the most common cause out of 5 causes (hypertensive heart disease 24.4%, dilated cardiomyopathy 22.4%, valvular heart disease 16.1%, other heart disease 12.8%) in Hospitalized Heart Failure patients, and the preserved EF group is more likely to have ischemic, hypentensive, valvular etiology. While anemia and renal dysfunction were the most frequent co-morbidities (43.9% and 43.5%), atrial fibrillation, anemia, diabetes, stroke, were more common in the preserved EF group. Diuretics

were taken in 74.5% of patients at discharge, whereas angiotensin-converting enzy (ACE) inhibitors or angiotensin II receptors (ARB), beta-blockers and aldosterone antagonists were used in 64.4%, 58.6%, and 70.9% of cases, respectively. Calcium channel blockers, Statins, Clopidogrel, Nitrates were more often prescribed to the HF patients with preserved EF. Median hospital stay was 8 days. Length of hospital stay was longer in HF patients with reduced EF than those with preserved EF (8 days vs 7 days, $p=0.02$). All-cause in-hospital death was 4.7%, no deference was observed between the two groups (4.0% vs 5.1%, $p=0.431$). The all-cause mortality was 10.8% at one year, 20.7% at 2 years, and 36.0% at 5 years. The HF patients with reduced EF and preserved EF experienced similar all-cause mortality. The independent predictors of all-cause death were age, BMI, serum sodium, Serum uric acid, serum albumin, anemia, thyroid dysfunction, liver dysfunction.

CONCLUSIONS There are some similarities as well as differences between the HF patients with reduced EF and preserved EF. The study provides an evidence-based epidemiology of Hospitalized Heart Failure patients in South China, which will benefit us a lot in the clinical practice.

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Clinical and Economical Success of a Management based on a New Classification of Heart Failure

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OBJECTIVES Current definitions of heart failure (HF) are vague and impractical. So we devise a new classification of HF which can guide its management and improve its outcome. The classification is based on the status of fluid volume in 3 compartments of the body. The intravascular compartment includes the intra-arterial and intravenous fluid. The extravascular compartment is mainly the fluid in the tissue (extracellular). This new definition classifies patients according to the fluid overload in either intravenous or extravascular compartment or hypo-perfusion in the intra-arterial compartment.

METHODS The patients were enrolled and physical examination was recorded for fluid overload in the venous system, mainly by the presence of rales in the lung and by painful sensation with a minimal punch in the right lower rib cage (to check for liver congestion). Fluid overload in the extravascular system consists of fluid infiltration in the abdominal wall, edema at the ankle, thigh, dependent areas (e.g. presacral area, etc). Low perfusion in the arterial compartment consists of low blood pressure, cerebral hypoperfusion (causing dizziness, sleepiness or change of mental status), renal perfusion (causing pre-renal azotemia (increased blood urea nitrogen and creatinine) and distal peripheral arterial system perfusion (causing fatigue or exercise intolerance). Intravenous loop diuretics were used when there is intravenous fluid overload. Long term loop or convoluted tube diuretics were used to remove fluid from the extravascular compartment. Angiotensin converting enzyme inhibitor was given to patients with low EF. Number of medication, length of stay, re-admission rate and mortality were recorded up to one year follow-up.

RESULTS 100 patients were enrolled from January 2015 to April 2016. All were diagnosed with HF in the emergency room.

The length of stay, number of medications used, mortality in one year and re-admission rate were much better when there was no intravascular fluid overload.

CONCLUSIONS The new classification of HF and its management are based on fluid status in the intravascular compartment (mainly venous) and extravascular compartment. The use of diuretics is more specifically focused at the removal of fluid in the intravascular compartment in the acute phase and in the extravascular compartment in the chronic phase. Patient without intravascular fluid overload had better prognosis. This new classification and management are more successful in speeding up recovery, sustaining the asymptomatic period, improving the long term prognosis while lowering the cost of care for patients with HF. Another important aspect of this classification is its ability to separate the sick patients who may need to be admitted and the stable patients who could be treated as out-patients. Randomized studies with higher number of patients are needed to validate the above preliminary data.