

Background: Psychosocial factors are active predictors of adverse outcomes after heart transplantation (HTx) and is actively screened for during the pre-transplant evaluation. There are a lot of publications highlighting the impact of psychological disorders, including depression, on post-heart transplant follow-up but there is no information about the personality factors (PF) in heart transplanted population. Purpose: to estimate the PF in patients who underwent HTx. Methods: From January 2010 to July 2019 it was performed 129 HTx (mean age 47 ± 14 year-old), 6 of them were children (from 10 to 16 year-old). We excluded 22 patients who died in early-term or underwent HTx less than 30 days ago. We analyzed retrospectively 107 patients (n=75 – male; all of them completed the Cattell's Personality Factor Questionnaire (CPFQ) what included 187 questions to estimate primary and secondary PF with low and high scores. Results: There was a prevalence of high scores in described population (>50% for 13 from 20 high scores). Only one third of patients were fast-learners while others had a lower mental capacity. Most of recipients were distant (factor A – 60% (n=64)), careful (factor F – 61% (n=65)), anxious and restrained (factors F2 (64%), n=69) and F4 (82%, n=88)). Moreover, 47% (n=18 from 38 (n=22 – retired)) of patients with low score of emotional stability (factor C – affected by feelings) returned to work comparing with 42% (n=29 from 69 (n=28 – retired)) with high score (emotionally stable, mature). One year after HTx the number of physically active recipients were higher than in those who had low anxiety in compare with high anxiety ones (41% (n=18 from 44) vs. 32% (n=20 from 63)). Self-sensitivity (factor I – 57%, n=43), suspicious vigilance (factor L – 66%, n=50), tough-assured apprehension (factor O – 58%, n=44) were more frequent PF for male gender while tender-minded sensitivity (factor I – 97%, n=39), trusting vigilance (factor L – 52%, n=19) and self-doubting apprehension (factor O – 77%, n=24) – for female gender. It was typical for both sexes to be self-reliant (factor Q2: male – 85% (n=65) and female – 94% (n=29)), self-disciplined (factor Q3: 71% (n=54) and 68% (n=21), respectively) and driven (factor Q4: 66% (n=50) and 74% (n=23), respectively), as well as had a high anxiety (factor F1: 53% (n=40) and 74% (n=23), respectively). In addition, 62% male and 71% female in analyzed population were introverted, socially inhibited (factor F2), 80% and 87%, respectively, – selfless (factor F4). Conclusion: PF are recipients' non-modifiable characteristics that impact on their behaviour and mental health, return to work and social life after HTx. Post-transplant rehab should include the development of patient-doctor relationship, the ability of 24h contact with their medical staff in case of emergency or transplant complications. To know recipients' PF will be helpful in creating a personalized approach how to manage and to rehab them.

Chronic Heart Failure: Pharmacotherapy

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Incidence of worsening renal function and its associations with drug treatment in ischemic heart failure patients with mid-range ejection fraction

D Dmytro Lashuk¹; V D Syvolop¹; ¹Zaporizhzhya State Medical University, Zaporizhzhya, Ukraine;

Worsening renal function (WRF) is common during the treatment of heart failure and has been associated with decreased survival, hospitalizations, and disease progression. The incidence of WRF and its association with drug treatment in patients with ischemic heart failure (CHF) with mid-range ejection fraction remain uncertain.

Materials and methods. One hundred and nine patients (83% males, age 58.8 ± 8.1 years) in NYHA class II and III with ischemic CHF with mid-range ejection fraction as left ventricular ejection fraction of 40% to 49% were prospectively evaluated. Clinical and echocardiographic data at baseline were collected. Mean ejection fraction $44.8 \pm 2.5\%$. The glomerular filtration rate (eGFR) was calculated using the formula MDRD (Modification of Diet in Renal Disease). WRF was defined by >20% reduction in eGFR. The average baseline GFR was 75.9 ± 18.2 mL/min/1.73m². Therapy included: ACE inhibitors/ARBs (80 %), beta blockers (84 %), diuretics (84 %), statins (82 %), angiotensin mineralocorticoid receptor (66 %), antiplatelet agents (72 %), calcium antagonists (14 %), amiodarone (16 %), ivabradine (12 %). The cumulative survival curves were constructed with the use of the Kaplan-Meier method and groups were compared with the log-rank test.

Results: In order to evaluate the effect of drug treatment on renal function in patients with ischemic CHF with mid-range EF we analyzed long-term follow-up. During the observation period of 24.9 [13.6; 42.6] months 43.1% of patients had worsening renal function. Log-rank test showed that the use of diuretics (hazard ratio (HR) 1.78; 95% CI 1.01-3.2; p<0.05) regardless of its number (p>0.05), mineralocorticoid receptor antagonists (HR 2.84; 95% CI 1.41-5.71; p<0.01), vitamin K antagonist (HR 2.78; 95% CI 1.05-7.37; p<0.05), digoxin (HR 4.3; 95% CI 1.19-15.3; p<0.05) associated with worsening renal function. At the same time, use of aspirin in complex treatment as an antithrombotic agent (HR 0.41; 95% CI 0.20-0.82; p<0.05), torsemide as a diuretic (HR 0.25; 95% CI 0.06-0.99; p<0.05), statins (HR 0.35; 95%

CI 0.11-1.04; p<0.05), preferably atorvastatin (HR 0.07; 95% CI 0.02-0.24; p<0.001) demonstrated slower deterioration renal function in patients with ischemic CHF and mid-range ejection fraction.

Conclusions: In patients with ischemic chronic heart failure with mid-range ejection fraction the worsening renal function occurs in 43.1% during long-term follow-up periods. The use of aspirin as an antiplatelet agent, torsemide as a diuretic, and atorvastatin as a statin is associated with a slowing the deterioration of renal function in patients with ischemic CHF with mid-range ejection fraction.

Ventricular Assist Devices

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Efficacy of conservative approach for HeartWare left ventricular assist device pump thrombosis: a single center experience

P Lesný¹; M Luknaří¹; V Simovícová¹; M Danková¹; A Dleš¹; M Chudý¹; E Gongalvesová²; ¹Dept. of Cardiology, School of Medicine Comenius University and National Cardiovascular Institute, Bratislava, Slovakia;

Background: Pump thrombosis is a life-threatening complication after left ventricular assist device (LVAD) implantation. Optimal treatment remains controversial. Medical treatment is debatable because of efficiency and pump exchange is a high-risk surgery.

Purpose: We aimed to analyze the efficacy of conservative treatment for HeartWare LVAD pump thrombosis.

Methods: Forty patients (pts) underwent HeartWare LVAD implantation between July 2013 and December 2019. Thirty nine pts (25 male) who survived implant surgery were included in the analysis. Mean age was 50 ± 12 years (range, 25 – 69 years). Pump thrombosis was diagnosed by clinical signs of hemolysis, lactate dehydrogenase elevation (at least threefold increase), and increase in pump power. A conservative approach using systemic thrombolysis (recombinant tissue plasminogen activator - rTPA) alone, or with subsequent intravenous heparin was used in all pts with pump thrombosis. rTPA protocol consisted of a 10 mg intravenous bolus followed by 10 mg administered in one-hour infusion. Treatment success was defined as complete resolution of hemolysis, normalization of power consumption, with no requirement for LVAD exchange or death at 30 days.

Results: Median LVAD support duration was 354 days (range, 12 – 1583 days). There were 12 pump thromboses in 8 pts for a total event rate of 0.24 events/patient-year of support. Single dose of rTPA was used in 7 cases, repeated dose of rTPA and/or heparin were administered in 5 cases. Conservative treatment was successful in 11 of 12 thrombotic episodes (91.7 %). We observed two ischemic stroke events, one pt died, one pt recovered without sequelae. There was no surgical pump exchange necessary and no bleeding occurred.

Conclusion: Conservative treatment in pts with HeartWare LVAD pump thrombosis is effective with low incidence of complications. It should always be considered before surgical pump exchange.

Chronic Heart Failure: Pharmacotherapy

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The efficiency of eplerenone in complex treatment of the patients with arterial hypertension, atrial fibrillation and heart failure with preserved ejection fraction

T D Danilevych¹; V P Ivanov²; ¹National Prokhorov Memorial Medical University; Prokhorovskiy of Internal medicine, Vinnitsa, Ukraine; ²National Prokhorov Memorial Medical University, Internal medicine N3, Vinnitsa, Ukraine;

Introduction: current agreed guidelines can be used predominantly for the management of the patients with heart failure (HF) with reduced ejection fraction (EF). Instead, treatment standards for patients with HF and preserved EF (HFpEF) are only general provisions that require improvement in the treatment algorithm.

The aim – to determine clinical efficacy of eplerenone in the complex therapy of the patients with arterial hypertension (AH) and frequent recurrences of atrial fibrillation (AF) and HFpEF.

Methods: 146 patients with AH II stage and HFpEF were examined. All patients suffered from frequent recurrences of paroxysmal/persistent atrial fibrillation (AF). The mean age of the patients was 61.2 ± 0.7 years. Among them 68 (46.6%) were male. Permanent antiarrhythmic therapy according to guideline was prescribed for all patients. The antiarrhythmic efficacy was evaluated on the subjective sensations of the patients – the patient self-assessed the frequency of AF attacks and their course in daybooks. Combination of perindopril + indapamide in a dose of 5/1.25/10/2.5 mg/day was given 65 (44.5%) and combination of losartan + hydrochlorothiazide in a dose of 50/12.5/100/25 mg/day – 81 (55.5%) patients. Eplerenone was added to these combinations for 31 (47.7%) and 41 (50.6%) patients, respectively (p = 0.72). Clinical characteristics of the groups with/without eplerenone showed that these groups were comparable for clinical and instrumental parameters.