Implementing a Novel Integrated Heart Failure Disease Management Program in Israel

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Background: Heart failure (HF) is associated with frequent hospital admissions, impaired quality of life (QoL), high mortality and high healthcare costs.
Objectives: To design and implement a disease management (DM) program aiming to reduce mortality and hospital re-admissions, and improve patients' QoL while containing costs of healthcare.
Eligibility: Patients (NYHA class III-IV), hospitalized for HF.
Program Design: The program is implemented nationwide, within the framework of Maccabi Healthcare Services. It includes two main components:

- Regional HF centers
- A national call-center

Eligible patients are evaluated at the HF centers by cardiologists and HF nurse specialists. A drug therapy plan is delineated by cardiologists and self-care education is delivered by nurses. Patients are provided with telemetric equipment for home-monitoring of weight, heart-rate and blood-pressure. Between subsequent visits to the HF centers, DM is given by nurse specialists at the HF centers and the call-center, guided by the treatment plan, tele-monitoring information, and designated protocols. DM activities include lifestyle counseling, titration of drug therapy, monitoring of adherence and side-effects, and problem-solving in the case of acute events.
Program evaluation: Evaluation is carried out using a randomized controlled trial design. Patients allocated to the usual-care (control) arm are followed exclusively by their primary practitioners and cardiologists. After recruitment, patients in both study arms (DM and usual-care) are re-evaluated every 6 months for process and outcome measures.
Outcome Measures: Hospital re-admissions, QoL, all-cause mortality, and costs of care.
Current Program Status: A national call-center and four regional HF centers are currently operating and patients are being recruited.

Marked Transient Reduction of HDL and Other Lipoproteins in Acute Peri-Myocarditis

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Background

Acute peri-myocarditis is a major inflammatory disease that may lead to impaired cardiac function. Although the disease is well recognized, the clinical picture may be confused with myocardial infarction (MI). While, alterations in plasma lipoproteins concentration are known to take place in trauma, severe sepsis and even acute MI, the lipoprotein levels in acute peri-myocarditis have not been studied. The purpose of this study was to investigate the lipoprotein levels in patients with Acute peri-myocarditis .

Methods

Thirty consecutive patients 29 (96.6%) males age 31±10, with first episode of acute peri-myocarditis were enrolled in the study. Acute peri-myocarditis diagnosis was confirmed by the following: clinical history, ST ↑ or PR ↓ on EKG, elevated inflammation markers and echocardiographic findings. Patients' detailed medical history, EKG, Echocardiography and blood tests including lipid profile were obtained within 24 hours from admission. Follow up examination repeating the same parameters were obtained upon recovery.

Results

Low levels of lipoproteins were found upon admission. Markedly decreased level of HDL was observed, 82% of the patients had HDL < 40, 39% had extremely low level of HDL < 25 mg/dl. After recovery HDL level increased in 96% of patients (average change 114.7%). Significant changes in the levels of LDL and TG were also observed.

mg/dl	Admission	Follow-up	Average change	P value
Total Cholesterol	130.35±21.05	157.04±41.43	23.46%	≤0.001
HDL	27.16±13.58	44.06±11.88	114.72%	≤0.001
LDL	77.2±20.9	93.19±27.29	21.18%	0.004
TG	119.1±78.37	147.32±79.97	59.33%	0.024

Conclusions

Low lipid profile was found during acute peri-myocarditis.

Marked reduction of HDL levels during acute peri-myocarditis is a new marker for the disease, and may assist in differentiating acute peri-myocarditis from acute coronary syndrome.

Importance of Interventricular Septal Motion for the Remodeling of the Right and Left Ventricles in Patients with Coronary Artery Disease – an Echocardiographic Study

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Background: The interventricular septum (IVS) is an important part of both the right and left ventricles (RV and LV) but there is little information about its influence on biventricular remodeling.

Methods: Included in our analysis 179 stable ambulatory patients with history of coronary artery disease (myocardial infarction and or CABG). Patients with LBBB and significant valvular dysfunction were excluded. Echocardiograms were analyzed to obtain long and short axis dimensions of LV and RV (sphericity index (SI) was calculated as their ratio). Patients were stratified into 4 groups according to quantitative analysis of IVS motion (groups 1-4; normal, mild, moderate and severe impairment). Comparison among groups was performed using ANOVA.

Results: LV ejection fraction decreased from 49% (group 1) to 26% (group 4). LV long axis was (mm) 78, 82, 84 and 91 for groups 1-4 respectively, $p<0.0001$. Similarly short axis was 47, 50, 55 and 63 respectively, $p<0.0001$). The SI was 1.66, 1.66, 1.54 and 1.46 respectively, $p<0.0001$. Values for RV were: long axis – 74, 78, 79 and 84 respectively, $p<0.0001$; short axis – 39, 41, 41 and 46 respectively, $p<0.0001$; SI – 1.92, 1.95, 2.01 and 1.85, respectively, p=NS. Mild degree of IVS motion abnormality was already associated with LV remodeling while RV remodeling occurred only at a later stage (the RV SI decreased only in group 4). RV dysfunction and remodeling correlated with LV dysfunction (and remodeling), with IVS motion abnormality, but not with pulmonary artery pressure.

Conclusions: LV and RV remodeling were strongly related to the degree of IVS motion abnormality. RV dimensions increase even with mild degree of IVS motion abnormality while the RV SI decreases only at a later stage. RV function and remodeling is related to IVS motion (ventricular interaction) and not to pressure overload.