

those 5 patients with VT had myocardial scar but only 2 had left ventricular ejection fraction (LVEF) <35%. Patients without scar did not present any malignant arrhythmia. Sensitivity, specificity, positive and negative predictive values for the presence of scar to predict VT were 100%, 70%, 35% and 100% respectively; and 40%, 93%, 40% and 93% for LVEF <35%.

Conclusion: LGE-CMR identifies patients at risk for malignant arrhythmias beyond the prediction provided by LVEF. Myocardial scar by LGE-CMR confers higher sensitivity and negative predictive value for malignant arrhythmias in our population.

P1602

Dysregulation of insulin levels in Chagas heart disease is associated with altered adipocytokine levels

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Background: Metabolic, inflammatory, and autonomic nervous system dysfunctions are present in patients with heart failure (HF). However, whether these changes are due to left ventricular dysfunction or heart failure is unknown.

Methods: We evaluated metabolism and inflammatory activity in patients with idiopathic dilated cardiomyopathy (IDC) and chagasic cardiomyopathy (CHG) and their correlation with the autonomic nervous system (ANS). Forty-six patients were divided into 3 groups: IDC, CHG, and control (CG). All patients underwent anthropometric measurements. Levels of adiponectin, leptin, insulin, interleukin-6 (IL-6), and tumor necrosis factor-alpha (TNF-alpha) were assayed in serum samples using ELISA. ANS was assessed by heart rate variability in time and frequency domains on a 24-hour Holter monitor. High-frequency (HFr) component values were used to estimate parasympathetic activity, and low-frequency (LFr) component values were used for sympathetic activity. Analyses were made of the correlations of each of the metabolic parameters (insulin, leptin, and adiponectin) with the inflammatory cytokines (interleukin-6 and TNF-alpha) and with ANS assessment measurements.

Results: No differences were noted between groups regarding blood glucose levels, total cholesterol, leptin, and adiponectin. Insulin levels were lower in CHG 5.4 ± 3.3 μ U/mL compared with that in CG 8.0 ± 4.9 μ U/mL and IDC 9.9 ± 5.0 μ U/mL ($p=0.007$). Levels of interleukin-6 and tumor necrosis factor-alpha were also higher in CHG compared with that in the other groups. Insulin was positively associated with leptin ($r=-0.579$; $p=0.024$), LFr/HFr ratio ($r=0.562$; $p=0.029$), and with the LFr component ($r=0.562$; $p=0.029$) in CHG. Insulin levels were negatively associated with adiponectin ($r=-0.603$; $p=0.017$). The addition of an adiponectin unit reduced average insulin by 0.332 μ g/mL. A decrease was noted in insulin levels in CHG compared with that in IDC and CG. Insulin levels were associated with ANS parameters and adiponectin.

P1603

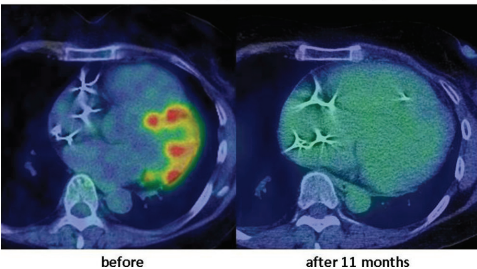
Efficacy of combination therapy of methotrexate and low-dose corticosteroid for cardiac sarcoidosis evaluated by flutaurine-18 fluorodeoxyglucose positron emission tomography

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Background: Although cardiac sarcoidosis can be life threatening if not treated appropriately, there is no large study to guide therapeutic strategy. Some reports say that the combination therapy of methotrexate (MTX) and low-dose corticosteroid was effective to improve the clinical condition, and other report says such therapy was effective to preserve cardiac ejection fraction. Such combination therapy may also be able to reduce the adverse event of high dose steroid therapy. On the other hand, flutaurine-18 fluorodeoxyglucose positron emission tomography (FDG-PET) can evaluate the activity of cardiac sarcoidosis, so we can see the efficacy of combination therapy by FDG-PET.

Methods: We retrospectively reviewed 6 cardiac sarcoidosis patients who were treated with initial dose of 6mg/week MTX and 10mg/day prednisolone. Dose of prednisolone were decreased gradually to 3–5mg/day. FDG-PET was performed at the beginning and after more than 1 year. We evaluated the clinical event during the follow-up period and the area of FDG uptake, the maximum value of standardized uptake (SUVmax).

A case; 55 y.o. female
FDG-PET uptake disappeared after the therapy



Results: Six patients including 4 females, average age of 66 y.o. were treated with combination therapy. One patient was already implanted DDD pacemaker, and 2 were implanted CRT-D device. Three patients had histories of admission due to congestive heart failure. Mean clinical follow-up period was 22.2 months and follow FDG-PET was performed at 17.3 months. The average ejection fraction was 41.8% at the baseline and 45.4% at the chronic stage. Cardiac function was preserved in all cases. Although 1 patient admitted due to pneumonia (not fatal), no other adverse event and no cardiac event occurred during follow-up. We could see the reduction of FDG uptake area in all cases, and almost complete disappearance in 3 cases. SUVmax also decreased in all cases, the average index significantly reduced from 11.70 to 5.08 ($p=0.002$).

Conclusion: FDG-PET findings suggest that the combination therapy of MTX and low-dose corticosteroid may affect the good clinical course for cardiac sarcoidosis.

P1604

Prevalence of obstructive sleep apnea in patients with cardiac sarcoidosis and its influences to physical and mental health

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Background: Fatigue is a common symptom in sarcoidosis. Obstructive sleep apnea (OSA) is a treatable cause of fatigue and sleepiness. In cardiac sarcoidosis (CS), all patients are treated with corticosteroids that often results in significant weight gain and thus predispose to OSA.

Purpose: To determine the prevalence of OSA in CS and determine the effect of OSA on adverse cardiac events and the health-related quality of life (HRQOL).

Methods: Biopsy-verified CS patients were screened for OSA between February 2013 and December 2016 using polysomnography or home sleep testing devices Embletta or ApneaLink. Patients completed in January 2017 RAND-36 (general health-related quality of life questionnaire), FSS (Fatigue Severity Scale) and BDI (Beck Depression Inventory) questionnaires. Clinical data was retrieved from registry of myocardial inflammatory diseases.

Results: This study included a total of 106 CS patients of which 74 (70%) were female and mean age was 53.9 ± 10.7 . Of 106 patients, OSA was diagnosed in 18 patients (17%) (prevalence in general population is 2–4%). No significant differences between groups (with or without OSA) in age, gender, depression or reduced LV dysfunction were found. Consistent with prior studies, BMI correlated with OSA (BMI with OSA 30.7 vs without OSA 26.7, $p=0.001$). All these patients were treated according to current guidelines. OSA did not result in higher rate of ventricular arrhythmias (VT/VF) (log-rank test $p=0.522$).

Fatigue was significantly more common symptom in CS patients with treated OSA (FSS normal value ≤ 4 ; with OSA FSS mean 4.74 vs without OSA 3.62, $p=0.015$). Health-related quality of life (sub scores; role physical, role emotional and general health) was significantly worse among patients with OSA. Furthermore, quality of life remained lower in patients with OSA, regardless of receiving therapy or not.

Fatigue and HRQOL scores

		CS patients with OSA (n=18)	CS patients without OSA (n=88)	
FSS total (fatigue)	normal value scores ≤ 4	6 (33%)	51 (58%)	
FSS total	scores > 4	12 (67%)	37 (42%)	
RAND-36 (HRQOL)	mean values in Finnish population			
Role function/physical	74.8	27.8	57.7	$p=0.006$
Role function/emotional	75.0	42.6	72.0	$p=0.003$
General health	65.0	39.4	51.4	$p=0.045$

Conclusion: OSA is a common (17%) co-morbidity in CS. Screening for OSA should be considered in CS.

P1605

High occurrence of sustained ventricular tachycardia despite immunosuppressive treatment in cardiac sarcoidosis

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Background: Heart failure (HF), atrioventricular conduction disorders (AVC), ventricular (VTA) and atrial (ATA) tachyarrhythmias are pivotal manifestations of cardiac sarcoidosis (CS). Whether patients (pts) with CS treated by immunosuppression (IT) are at risk of VTA remains to be determined.

Purpose: To investigate the risk of developing sustained VTA during follow-up (FU) among patients with CS treated with IT.

Methods: We report the FU of a series of 28 pts from two tertiary care centers with HF and/or arrhythmias due to CS proven by metabolic PET and/or biopsies. Nineteen (68%) pts started IT and were followed-up (20 \pm 10 months) with a metabolic PET to evaluate the inflammatory activity during the time course of the IT treatment.