assessed by LV function. T2-weighted imaging was conducted for detection of myocardial oedema. Gadolinium late enhancement (LE) imaging was conducted for detection of fibrosis.

Results: Of the 37 patients 14 were male. The mean age was 51.9±2.4 years. 20 patients also underwent coronary angiography, and only one patient had a significant stenosis of a marginal branch. Four patients (11%) had a cardiac MRI scan with pathological findings; three patients (8%) a non-circumferential PE of ≤ 5mm and an otherwise normal MRI. In 12 patients a PE ranging from 4 to 30mm was associated with other pathological findings. Quantitative analysis of LV function revealed a mean ejection fraction (EF) of 51.9±2.3%. EF was reduced (≤55%) in 20 patients (54%). 7 patients (19%) showed hyperintense areas in T2-weighted images indicative of myocardial oedema. LE of the myocardium was observed in 23 patients (62%), all demonstrating a non-ischemic pattern of LE or multiple small endocardial LE zones not compatible with myocardial infarction due to coronary artery disease. Lastly, 4 patients (11%) showed the typical pattern of endomyocardial fibrosis with oedema and contrast enhancement of the myocardial/endocardial border zone and thrombotic material at the left and right ventricular apex.

Conclusions: Cardiac MRI revealed pathologies in 90% of the study cohort. Yet, the pattern of cardiac manifestations varies significantly. More than half of the patients showed cardiomyopathy with reduced systolic LV function. Non-ischemic LE was present in the majority of patients and combined in one third of cases with myocardial oedema indicating acute inflammation. The unique pattern of endomyocardial fibrosis was observed in 11% of the patients.

3502 I BENCH RNA helicase (2C) inhibitor prevent enteroviral-mediated cardiomyopathy
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Background: Coxsackievirus B3 (CVB3) is known as an important cause of myocarditis and dilated cardiomyopathy in children and adult. Enterovirus-2C (E2C), a viral RNA helicase, inhibits the host NF-kB activity, which affects to host protein synthesis. We hypothesize that the inhibition of 2C may suppress virus replication and prevent enteroviral-mediated cardiomyopathy.

Methods and results: We generated a chemically modified small molecule structure of enterovirus-2C inhibitor (E2C). From in vitro assay, the strong E2C candidate chemical, KR22865, was selected for in vivo test which were performed using DBA/2 strain to establish chronic myocarditis. Mice were treated by KR22865 intraperitoneally injection for three consecutive days at a dose 8mg/kg /day after day3 CVB3 infection (p.i) (n=33) that is similar to human patient antiviral drug treatment time point. The infected controls (n=35) were injected by PBS. 4-week survival rate of KR22865-treated mice was significantly higher than that of controls (92% vs 71%; p<0.05). Virus titers and myocardial damage were significantly reduced in the KR22865 treated group. In addition, echocardiography was observed KR22865 administration dramatically maintained mice heart function compared to the control mice at day 28 p.i chronic stage (LVDD, 3.1±0.08 vs 3.9±0.09, p<0.01; LVDS, 2.6±0.07 vs 2.5±0.07, p<0.001; FS, 34.8±1.6 vs 28.5±1.5%, p<0.06; CVBS+KR, n=6 vs CVB3, n=4).

Conclusion: Enterovirus-2C inhibitor (E2C), KR22865, inhibited the activity of enterovirus 2C, significantly reduced viral replication, chronic myocardium damage, and CVB3-induced mortality in DBA/2 mice. These results suggested that KR22865 is a novel therapeutic agent for treatment of enterovirus-mediated diseases.

3503 I BENDSIDE Utility of 18F-FDG PET guided mediastinoscopy and lymph node biopsy in the diagnosis of cardiac sarcoidosis
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Purpose: Cardiac sarcoidosis (CS) is a difficult-to-diagnose myocardial disease particularly in patients free of evident extracardiac sarcoidosis. Histologic diagnosis is needed but the sensitivity of endomyocardial biopsy (EMB) is notoriously poor. We describe here our experience in the use of 18F-fluorodeoxyglucose (18F-FDG) PET and mediastinoscopy in the diagnosis of CS.

Methods: The Myocardial Inflammatory Diseases in Finland (MIDFIN) Study Group has collected all cases of CS identified in Finland over the last 20 years (n=104). In this study, we focused on the 63 patients who had undergone 18F-FDG PET for the assessment of myocardial disease. Their diagnostic procedures and results were retrospectively reviewed in detail.

Results: A total of 63 patients had undergone 18F-FDG PET. Of them, 56 patients had a focally enhanced myocardial 18F-FDG uptake with reduced rest perfusion, a combination suggestive of an inflammatory condition. In 39 of the 56 patients (70%), 18F-FDG uptake in medial/lateral lymph nodes (mLN) was pathologically increased (“hot” mLN group). To obtain susceptible tissue for microscopy, 19 of the 39 patients underwent mediastinoscopy and mLN biopsy. No complications occurred. In 19 of 19 cases, the mLN histology was diagnostic of sarcoidosis (sensitivity, 100%). Importantly, mediastinoscopy was frequently used as a “rescue” diagnostic strategy since 16 of the 19 patients had a history of either one (10 patients) or several (6 patients) prior negative cardiac EMBs. In the 20 “hot” mLN patients who did not undergo mediastinoscopy, sarcoidosis had been verified by EMB in 13 patients (in 4 repeated attempts), by biopsy of extrathoracic tissue in 6 patients, and from an explanted heart in 1 patient.

Conclusion: Mediastinoscopy with biopsy of lymph nodes “hot” at 18F-FDG PET provides a very useful diagnostic strategy in patients presenting with manifestations suggestive of CS but devoid of histologic verification.

3504 I BENCH Effect of CD40 siRNA on Th17 cells and IL-17 and IL-23 in rats with experimental autoimmune myocarditis
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Objective: To investigate the effect of CD40 siRNA on the myocardial pathologic changes, expression of Th17 cells specific transfer factor gene RORC mRNA of myocardium and concentration of Th17 cells related cytokines interleukin-17 (IL-17) and interleukin-23 (IL-23) in peripheral blood of rats with EAM.

Methods: Forty 6-week old healthy male Lewis rats with body weight ranging from 185 to 210 gram were divided into EAM group (n=10), CD40 siRNA group (n=10), siRNA group (n=10), and control group (n=10) randomly. The rats in EAM group, CD40 siRNA group, and siRNA group were immunized with cardiac C protein and completed Freund adjuvant in double foot pads. The rats in EAM group were injected with PBS buffer in double foot pads. On the eighth day after immunization, the myocardial histopathologic changes were observed by light microscope and the myocardial histopathologic scores were also calculated. The expression of RORC mRNA of myocardium was detected by real-time quantitative polymerase chain reaction (RQ-PCR). Enzyme linked immunosorbent assay (ELISA) was used to determine the level of IL-17 and IL-23.

Results: 1. Compared to EAM group, the myocardial histopathologic scores in CD40 siRNA group significantly lower (13.3±5.66 vs. 17.00±2.16, P<0.05, 2. The expression of RORC mRNA in CD40 siRNA group decreased significantly compared to the EAM group (2.13±0.28 vs. 2.93±0.36, P<0.05). 3. The serum level of both IL-17 and IL-23 in CD40 siRNA group also decreased significantly compared to EAM group (both P<0.05).

Conclusions: The results indicated that CD40 siRNA expression vector might reduce myocardial injury by inhibiting Th1 helper lymphocyte IL-17 activation and down-regulating the expression of IL-17 and IL-23.

3505 I BENDSIDE Gender differences in myocarditis: a nationwide study in Finland
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Purpose: Experimental and clinical studies suggest that occurrence and prese-