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## Effect of late gadolinium enhancement by cardiac magnetic resonance imaging on outcomes of patients with stress-induced (Takotsubo) cardiomyopathy

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**Background:** Cardiac MRI plays a promising role in the diagnosis of Takotsubo Cardiomyopathy (TC). Evidence on impact of late gadolinium enhancement (LGE) by Cardiac MRi, on in-hospital outcomes is lacking. We sought to do a retrospective study evaluating the effect of LGE.

**Methods:** We identified 39 TC patients who had a Cardiac MRI done in the acute phase. Patients were allotted into two groups: 1.LGE present (10) 2.LGE absent (29). All presented with: 1) acute cardiac symptoms, 2) a characteristic left ventricular contraction pattern and 3) no major CAD. Baseline characteristics are recorded. The occurrence of hospital mortality, length of stay, and cardiac complications were analyzed.

**Results:** Mean age was  $67\pm12$  yrs. No significant differences in baseline characteristics are noted. Median time to MRI was 2 days [1-3]. Average EF on initial Echo was  $38.5\pm14\%$  in LGE group and  $38\pm9\%$  in without LGE group (p=0.96) with improvement to  $16\pm1\%$  and  $12\pm2\%$  (p=0.04) respectively. No In-hospital mortality was noted. Outcomes on two groups respectively, are as follows: Median Hospital stay was 3 [3-4] and 4[3-6.5] (p=0.09), Median CCU days were 2.5[1-4] and 2[1-3] (p=0.69), inotrope requirement was in 10% v/s 13%, (p=0.75) and Mechanical ventilation was 10% v/s 4%, (p=0.41), new onset arrhythmias were found in 0% v/s 7%, (p=0.39).

**Conclusions:** Significant improvement of EF was noted in Takotsubo patients, in both LGE and no LGE groups. LGE by Cardiac MRI did not show any difference in the clinical outcomes of patients. However this study was limited by its smaller sample size. Further studies with larger sample size should be done to validate the results.

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## Variations in electrocardiogram and heart function: A clue to analyze upshot of high fat diet induced guinea pigs

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Myocardial Infarction (MI) is one major Cardiovascular Diseases (CVD), causes morbidity and mortality worldwide. Change in life style and dietary habits increases the occurrence of MI. Oxidative stress due to altered lipid metabolism is the key risk factor for MI. The present study is designed to understand the effect of saturated fatty acids on cardiac function and geometry. Twenty male guinea pigs of weight 450-550g were procured and divided into two groups and one of the groups was supplemented with high fat diet (HFD;10% lard) for a period of four months. After the induction, ECG and Echo-cardiogram were taken. Expression levels of inflammatory cytokines such as IL6, NF κB and TNFα were analyzed in order to investigate the relationship between HFD and inflammation. No significant increase in body weight and heart rate were found. ECG showed a significant variation in P duration, QT and QTc interval but maintained sinus rhythm. Echocardiogram did not show any significant difference in left ventricular dimensions. But slight increase in posterior wall thickness and inter ventricular septum thickness was observed. Significant increase in the levels of IL6, NFκB and TNFα were also observed. High fat diet with elevated amount of saturated fatty acids increases lipid profile and alters lipid metabolism which in turn leads to oxidative stress. It was clearly seen that oxidative stress has an effect on electrical conduction in heart. Thereby impairs the cardiac function. This was further confirmed by the elevated levels of inflammatory markers.

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