

## Refractory Ventricular Arrhythmia in Myocarditis

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Sir,

A 46 year old female, without any comorbidities, was admitted to our hospital wards with history of fever and severe myalgia, associated with thrombocytopenia and treated symptomatically as a viral fever. On the 2<sup>nd</sup> day after admission, she had a sudden cardiac arrest, was resuscitated, shifted to ICU and mechanically ventilated. The cardiac monitor showed repeated episodes of polymorphic ventricular tachycardia [VT], necessitating cardioversion nine times along with CPR for about 30 minutes. Cardiac evaluation revealed hyperlipidaemia but no other risk factors and no family history of deafness, sudden death or long QT syndrome. She was started on intravenous magnesium and amiodarone. Echocardiography showed a severely hypokinetic apical segment with ballooning and an ejection fraction of 25%, suggestive of possible stress cardiomyopathy. Coronary angiography was normal. The patient improved clinically and was extubated. About one hour later, she had an episode of ventricular fibrillation [VF], requiring cardioversion 5 times and CPR for about 10 minutes. She was again put on amiodarone and magnesium sulphate infusions. Further cardiology evaluation opined it to be a case of Viral Myocarditis with recurrent VT/VF.

The clinical presentation of viral myocarditis is heterogeneous, ranging from clinically silent conditions, acute coronary syndrome-like conditions, new onset of heart failure (HF), cardiogenic shock, ventricular arrhythmias and sudden cardiac death.<sup>1-3</sup> The mortality rate of acute myocarditis is 15%-20%.<sup>4-5</sup> Primary management involves medical management with anti-arrhythmics and supportive therapy. Refractory cases have been treated with implantable cardioverter-defibrillator [ICD] placement.<sup>6-7</sup>

Our patient continued to have several episodes of polymorphic VT

requiring repeated cardioversions and continued mechanical ventilation. She did not respond to increasing doses of amiodarone or lignocaine infusions. In view of this refractory VT/VF, she was taken up for left thoracoscopic cardiac sympathectomy at T1-T4, from the lower half of the stellate ganglion to T4. However, the same night, she had another episode of VF requiring cardioversion. Following this, she underwent implantation of an automatic implantable cardioverter-defibrillator [AICD]. This was associated with a dramatic improvement in her symptoms and she was discharged shortly afterwards. On follow up, she showed continued improvement with a repeat echocardiogram showing resolving of the apical hypokinesia and a normal ejection fraction.

This case highlights the importance of having a high index of suspicion for acute myocarditis, in patients presenting with the routine symptoms of a viral fever and the need for close monitoring for ventricular arrhythmias. Left cervical thoracic sympathectomy following refractory VT is associated with treatment failure and an incidence of sudden death of 6%.<sup>8</sup> AICD may be considered as a measure in refractory VT prior to sympathectomy.

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