Clinical profile and intermediate term outcome of 50 consecutive patient of ventricular tachycardia storm managed at a tertiary care center in India

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Background: Ventricular tachycardia (VT) storm is an uncommon but life-threatening episode defined as 3 or more sustained episodes of VT or VF requiring cardioversion within 24 hours. We present here intermediate results of an observational study on clinical profile and outcomes of 50 consecutive patients presenting with VT storm.

Purpose: To evaluate the clinical profile, management strategies and modalities of treatment in patient with VT storm.

Methods: This is a prospective observational cohort study, undertaken at a tertiary care hospital in India. Data of 50 consecutive patients with confirmed diagnosis of VT storm was collected for final analysis. Parameters assessed were clinical history, primary diagnosis leading to VT, medication history, comorbidities, implanted cardioverter device (ICD) details, treatment modalities tried including cardiac sympathetic denervation (CSD), subsequent hospitalization and follow up (≥6 months) details.

Results: 50 patients (36 men, 14 women, median age 55 (IQR, 46-65 years) were included in the study. The most frequent substrate of VT storm was scar caused by previous myocardial infarction (20 patients, 40%). Other causes included old myocarditis, hypertrophic cardiomyopathy, idiopathic DCMP, arrhythmogenic RV cardiomyopathy, previous TOF surgery, LQTs, idiopathic VT, VF and acute myocarditis. None of the patients had any active ongoing ischemia as the precipitant factor for VT storm. 43 patients (86%) already had ICD. A majority of patients (27, 54%) had Pleomorphic (≥3) morphologies of VT. Monomorphic VT was found in 19 (38%) and polymorphic VT in 4 (8%). The median duration of hospital stay was 6 (IQR, 4-14) days. Seven (14%) patients died in the index hospitalization and the remaining 43 (86%) patients were discharged successfully, of which 41 (82%) were alive at 6 months. There was significant reduction of number of VT at 6 months of follow-up compared to number of VT episodes prior to index hospitalization [(24, IQR15-40 vs. 1, IQR 1-3.5); p<0.0001). Optimization of dosage, addition or deletion of a new antiarrhythmic drug, controlled VT in 29 (58%) of patients; the remaining 21 (42%) of patients underwent bilateral CSD in addition to the protocol based management of VT storm. None of the baseline parameters were significantly associated with occurrence of VT storm or with the intermediate term survival.

Conclusions: A majority of VT storm patients were men. Old MI was the substrate in 40 % of patients. Medical management predominantly, adjustment of anti-arrhythmic drugs helped control the VT storm in 58 % of patients. A significant proportion of these patients required CSD as a management strategy. The in-hospital mortality was 14 % and 6 months survival was 82%.

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