



THE CLINICAL STUDY OF VENTRICULAR TACHYCARDIA WITH EMPHASIS ON SERUM ELECTROLYTES (A STUDY OF 50 CASES)

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KEYWORDS :

INTRODUCTION:

There are myriad types of ventricular arrhythmias (VAs), affecting patients with normal hearts and those with structural heart disease ranging from benign to life-threatening. VAs can arise from focal sites of origin or from reentrant circuits.

Premature Ventricular Contractions: PVCs are early depolarization of myocardium originating from ventricles. Traditionally they have been thought to be benign in the absence of any structural heart disease.

VENTRICULAR TACHYCARDIA: The usual definition of VT is three or more VPBs in a row at a rate of 100 or more beats/min. various electrolyte abnormalities can lead to origin of ventricular arrhythmias.

Material:

Fifty patients (n=50) of both the sexes, of the age more than 12, having a history of an episode of Ventricular Tachycardia and admitted in I.C.C.U. of PDU Medical College & Hospital, Rajkot who fulfilled the inclusion criteria & not having exclusion criteria were included in the study.

Exclusion Criteria:

Age less than 12 years.

Inclusion Criteria:

Patients diagnosed with VENTRICULAR TACHYCARDIA.
Age more than 12 years.

RESULT:

Electrolyte abnormality correction was provided to 66% of patients. In spite of correcting electrolyte abnormality, 64% needed electrical cardioversion to control their ventricular tachycardia. About 80% patients survived after treatment in our study. There was not any statistically significant relationship between electrolyte abnormality correction and survival of patients in our study.

CONCLUSION:

Our retrospective cross-sectional study involving 50 patients of ventricular tachycardia (age > 12 years) showed that its incidence was higher in patients of < 60 years age in comparison to elderly age group (≥ 60 years).

Palpitation, Dizziness and chest pain were the common presenting symptoms seen in patients.

Ischemic Heart disease was the most common co-morbidity seen in almost one out of every 4 patients which was followed by hypertension and diabetes mellitus.

About half of patients had addiction of tobacco.

90% patients had monomorphic type of ventricular tachycardia.

Systolic Blood pressure was non-recordable in about 2/3rd

patients.

S1 and S2 heart sound were heard 'muffled' in all.

8% patients had family history suggestive of sudden cardiac death.

SpO₂ on admission' was non recordable in 64% patients while 16% patients couldn't maintain acceptable level of 'SpO₂ on admission' > 94% even after O₂ support.

90% patients showed higher CK-MB levels.

RWMA (36%) and LVH (8%) were the common abnormalities found in Echocardiography.

40% patients had reduced LVEF.

Electrolyte abnormality correction was provided to 66% of patients. In spite of correcting electrolyte abnormality, 64% needed electrical cardioversion to control their ventricular tachycardia. About 80% patients survived after treatment in our study.

There was not any statistically significant relationship between electrolyte abnormality correction and survival of patients in our study.

Hyponatremia (20%), hypokalemia (32%), hypomagnesemia (38%) and hypocalcemia (62%) were the commonly seen electrolyte abnormalities in patients.

Our study concluded that despite correction of electrolyte abnormalities, Electric DC Cardioversion remains the first line and the choice of treatment and providing electrolyte correction did not reduce the need for cardioversion.

REFERENCES:

1. Tracy CM, Epstein AE, Bibliography Darbar D, et al. 2012 ACCF/AHA/HRS focused update of the 2008 guidelines for device-based therapy of cardiac rhythm abnormalities: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines and the Heart Rhythm Society.
2. AL-KHATIB SM et al: 2017 AHA/ACC/HRS guideline for management of patients with ventricular arrhythmias and the prevention of sudden cardiac death: A report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhythm Society. *Heart Rhythm* 15:e73, 2018.2 Knight BP, Pelosi F, Michaud GF, Strickberger SA, Morady F. (1999). Clinical consequences of electrocardiographic artifact mimicking ventricular tachycardia. *New Engl J Med*. 1999;341(17):1270-1274. doi:10.1056/NEJM199910213411704.
3. Brugada P, Brugada J, Mont L, et al. A new approach to the differential diagnosis of a regular tachycardia with a wide QRS complex. *Circulation*. 1991;83:1649-1659.
4. Schiller NB, Shah PM, Crawford M, et al. Recommendations for quantitation of the left ventricle by two-dimensional echocardiography. American Society of Echocardiography Committee on Standards, Subcommittee on Quantitation of Two-Dimensional Echocardiograms. *J Am Soc Echocardiogr*. 1989;2:358-367.
5. Gibbons RJ, Balady GJ, Bricker JT, et al. ACC/AHA 2002 guideline update for exercise testing: summary article: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Update the 1997 Exercise Testing Guidelines). *J Am Coll Cardiol*. 2002;40:1531-1540.
6. Probst V, Veltmann C, Eckardt L, Meregalli PG, Gaita F, Tan HL, Wilde AAM.

- Long-term prognosis of patients diagnosed with Brugada syndrome: Results From the FINGER Brugada Syndrome Registry. *Circulation*. 2010;121(5):635-643. doi: 10.1161/circulationaha.109.887026.
7. Priori SG, Gasparini M, Napolitano C, Della Bella P, Ottonelli AG, Sassone B, Colombo M. Risk stratification in Brugada syndrome: Results of the PRELUDE (PRogrammed ELEctrical stimUlation preDICTive valuE) Registry. *J Am Coll Car-diol*. 59(1):37-45. doi: 10.1016/j.jacc.2011.08.064.