

TORSADES DE POINTES IN THE EMERGENCY DEPARTMENT

Sung-Yuan Hu,^{1,4,5} Wei-Hsiung Hu,^{1,2,3,4,5} Dar-Yu Yang^{1,3}

¹Department of Emergency Medicine, ²Division of Cardiology, Internal Medicine, Taichung Veterans General Hospital, ³Chung-Shang Medical University, Taichung, ⁴National Taichung Nursing College, ⁵Central Taiwan University of Science and Technology

Correspondence to: Sung-Yuan Hu, MD

Department of Emergency Medicine, Taichung Veterans General Hospital, 160, Sec. 3, Taichung-Kang Road, Taichung 40705, Taiwan; E-mail: song9168@pie.com.tw

BACKGROUND: Torsades de pointes (TdP), a polymorphic ventricular arrhythmia, can progress to ventricular fibrillation and sudden death. Making the correct diagnosis and management of TdP is an important task for saving critical patients.

PURPOSE: To analyze the cases of TdP in the emergency department (ED), immediately manage them to improve survival, and find and treat the causes.

METHOD: Collection of cases of TdP in the ED of TCVGH retrospectively from May 1998 to May 2006. Sixteen patients were enrolled.

RESULT: There were seven (44%) males and nine (56%) females whose ages ranged from 17 to 91 years. The clinical manifestations included neurological symptoms and palpitations. Laboratory studies revealed hypokalemia, hypocalcemia and hypomagnesemia. Both the observed and corrected QT intervals showed a marked prolongation. The management included defibrillation for hemodynamic instability, intravenous infusion of magnesium, epinephrine, lidocaine, and isoproterenol and/or the implantation of a temporary cardiac pacemaker. Thirteen patients (81.3%) survived and three patients (18.7%) expired.

CONCLUSION: TdP denotes a prolonged QT interval and usually is iatrogenic and/or due to electrolyte imbalance or heart disease. Therapy of TdP focuses on the reestablishment of hemodynamic stability and the removal or correction of precipitants. Evaluation should include a complete history, physical examination and an assessment for heart disease and known eliciting factors.

Keyword: arrhythmia, polymorphic ventricular tachycardia, torsades de pointes