Effects of high thoracic epidural anesthesia on ischemic cardiomyopathy cardiac function and autonomic neural function

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ABSTRACT. We aimed at observing the effects of high thoracic epidural anesthesia (HTEA) on cardiac structure and function, heart rate variability (HRV), and QT interval variation (QTV) in ischemic cardiomyopathy (ICM) patients with chronic heart failure. We divided 30 ICM patients into HTEA (N = 16) and control (N = 14) groups. The control group was treated with medication, and the HTEA group was treated with HTEA and medication for 4 weeks. We measured the changes in the left-ventricular end-diastolic diameter (LVEDd) and left-ventricular ejection fraction (LVEF) before and after treatment by using echocardiography and examined changes in HRV and QTV using ambulatory electrocardiogram. HTEA significantly narrowed the LVEDd, improved LVEF, significantly increased the HRV, and significantly reduced the QTV in the ICM group compared to the control group. HTEA significantly narrowed the
ventricular chamber diameter size of ICM patients, enhanced myocardial contractility, increased myocardial electrical stability, and improved the cardiac structure and function.

**Key words:** High thoracic epidural anesthesia; Heart rate variability; Ischemic cardiomyopathy; Chronic heart failure