

# The effect of anesthesia depth on radiofrequency catheter ablation of ventricular tachycardia: a retrospective cohort study

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## Abstract

Background: Radiofrequency catheter ablation (RFCA) as a safe and effective method has been widely used in ventricular tachycardia (VT) patients, and with which anesthesiologists frequently manage their perioperative care. However, the procedure and prognosis may be affected by the use of anesthetics. Objectives: The aim of this study was to investigate the effects of different anesthetic depths on perioperative RFCA and recurrence in patients who with intractable VT and could not tolerate an awake procedure. Methods: We performed a retrospective study of all patients with a confirmed diagnosis of VT and underwent RFCA by general anesthesia from January 2014 to March 2019. According to intraoperative VT induction, they were divided into 2 groups: non-inducible group and inducible group. We constructed several multivariable regression models, in which covariates included patient characteristics, comorbidities, prepathy and BIS value. Results: We included 101 patients, 29 (28.7%) of whom experienced VT no induction, and 26 (26.3%) recurrence within one year. Based on pre-specified bispectral index (BIS), the BIS <40 was associated with elevated odds of VT no induction compared with a BIS value >50 (odds ratio, 6.92; 95% confidence interval, 1.47-32.56; P=0.01). VT no induction was an independent predictor of recurrence after RFCA (odds ratio, 5.01; 95% confidence interval, 1.88-13.83; P<0.01). Conclusions: This study reported lower BIS value during VT induction was associated with high risk of the failure of VT induction, which in turn affects postoperative outcomes. We propose that appropriate depth of anesthesia should be maintained during the process of VT induction.

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