Short communication

Effects of thiopental and propofol on heart rate variability during fentanyl-based induction of general anesthesia

Lesya Riznyk¹, Magdalena Fija³kowska¹, Krzysztof Przesmycki¹,²

¹II Department of Anaesthesiology and Intensive Care, F. Skubiszewski Medical University, Słodzka 16, PL 20-061 Lublin, Poland
²State Medical School, PWSZ, Słodzka 95/97, PL 21-500 Białystok, Poland

Correspondence: Krzysztof Przesmycki, e-mail: anest2@am.lublin.pl

Abstract:
Anesthetics depress the autonomic nervous system. The effects of thiopental and propofol on heart rate variability (HRV) during fentanyl-based induction of general anesthesia were studied in one hundred patients. We observed different effects of fentanyl, thiopental and propofol on HRV. Fentanyl decreased total power of HRV and low frequency power (LF), but not high frequency power (HF), indicating a greater reduction of cardiac sympathetic activity. Thiopental and propofol caused the further reduction of HRV and decreased HF power. Thiopental increased LF power and LF/HF ratio, indicating that the vagolytic effect is associated with the increase in sympathetic activity. Propofol preserved the LF power, indicating that the cardiac parasympathetic activity is reduced more than the sympathetic activity.

Key words:
thiopental, propofol, fentanyl, heart rate variability, induction of general anesthesia