IFDAS Abstracts

Comparison of Circulatory Dynamics During Induction of General Anesthesia Between Propofol and Remimazolam: Clinical Research

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Objective: Propofol is characterized by its relatively strong circulatory depressant effects. Basic studies have shown that remimazolam has less potent effects on circulatory dynamics than propofol. The purpose of this study was to clarify the cardiovascular effects of propofol and remimazolam in clinical practice.

Methods: Sixty patients aged 18 years to 39 years undergoing surgery under total intravenous anesthesia were included in the study. Patients were divided into 2 groups: group propofol (GP) and group remimazolam (GR). The following parameters were measured during induction of general anesthesia: systolic blood pressure (SBP), diastolic blood pressure (DBP), heart rate (HR), cardiac output (CO), cardiac index, stroke volume, stroke volume index (SVI), and anesthetic depth (BIS). After the control values were obtained, remifentanil was administered at 0.3 μg/kg/min for 1 minute. In GP, propofol was administered at 5 μg/mL with a target-controlled infusion. In GR, remimazolam was administered at 0.2 mg/kg and maintained at 1 mg/kg/h. The recording period was from control to 5 minutes after tracheal intubation.

Results: BIS was significantly lower in GP than in GR from 3 minutes after induction. SBP, DBP, HR, CO, and SVI were significantly lower in GP than in GR after tracheal intubation.

Conclusion: The doses of propofol and remimazolam used in this study did not cause any differences in the circulatory dynamics during induction of anesthesia. However, the invasion of tracheal intubation restored the hemodynamics of the GR to control values, whereas those of the GP remained depressed. The possibility of overdosing propofol cannot be ruled out, but the effects of remimazolam on circulatory depression were still considered to be less severe than those of propofol.

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Unlocking the Diagnostic Potential of the Basophil Activation Test in Patients with a History of Anaphylactic Shock: Timing and Clinical Utility

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Objective: Patients with a history of anaphylactic shock frequently seek dental care. However, patients who experience recurrent anaphylactic episodes are at risk for future reactions. The basophil activation test (BAT) has been gaining attention as an in vitro test to identify allergic triggers of anaphylaxis, facilitating prevention. However, BAT remains in the research stage, and several aspects need to be established, including the optimal testing time. Herein, we aimed to determine the efficacy and optimal testing time of BAT in patients with a history of anaphylactic shock and BAT positivity.

Methods: BAT was continuously performed on 2 patients who developed anaphylactic shock and had a positive BAT. The activation rate of basophils was observed over a prolonged period.

Results: For cefazolin sodium, BAT results were positive on days 33, 151, 161, 306, and 395 after the onset of anaphylactic shock but were negative on days 504 and 536. For latex products, BAT results were positive on days 133 and 1,779 after the onset of anaphylactic shock.

Conclusion: We successfully identified the causative agent of anaphylactic shock in 2 patients using BAT. Our findings suggest that the BAT response period may differ depending on the causative agent of anaphylactic shock.

Cerebral Oximetry: A Novel Approach to Resuscitation

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The NYU Langone Health Parnia Lab seeks to improve standards of care, survival rates, and neurologic outcomes for cardiac arrest patients undergoing cardiopulmonary resuscitation (CPR) in fields ranging from critical care to dental anesthesia. The overall survival for adult in-hospital cardiac arrest has not significantly improved from the first multicenter study published in 1953 (28%) to current studies in the United States (18%) and the United Kingdom

(29%). These poor outcomes illustrate the need for innovation beyond CPR. Cerebral oximetry–guided CPR is a novel approach that measures real-time regional cerebral oxygen saturation (rSO2) during chest compressions to assess oxygen delivery, guide treatment, and predict neurologic outcomes. Using this approach, the Parnia Lab published outcomes for 183 CPR efforts at 5 participating centers. The results demonstrate that if cerebral oximetry–guided CPR maintained an rSO2 greater than 65%, there was a higher incidence of return of spontaneous circulation (ROSC), patient survival, and favorable neurologic outcomes. In contrast, an rSO2 less than 25% was associated with unlikely ROSC and patient survival. This poster highlights the research being conducted at Parnia Lab using goal-directed, cerebral oximetry–guided CPR to assess cerebral oxygen delivery during resuscitation in order to prognosticate patient survival and neurologic outcomes.