

## **Evaluation of pleth variability index for predicting hypotension during induction of anesthesia in surgical patients**

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### **Objective**

To evaluate the ability of pre-anesthesia pleth variability index (PVI) in supine and passive head raising (PHR) position at 30° for predicting hypotension during induction of anesthesia.

### **Methods**

From September 2012 to October 2013, 106 patients scheduled for elective surgery under general anesthesia at Third Hangzhou Municipal Hospital with American Society of Anesthesiologists I - II were recruited. Pre-anesthesia values of blood pressure, heart rate, perfusion index, PVI in supine position and PHR at 30° were recorded. The minimum arterial blood pressure and minimum heart rate during anesthesia induction were recorded.

### **Results**

Blood pressure and heart rate significantly decreased after induction. And the decline ratio of diastolic arterial blood pressure and mean arterial blood pressure were moderately correlated with pre-anesthesia PVI at 30° PHR position with Pearson's coefficients of 0.492 and 0.463 respectively. The receiver-operating characteristic curve demonstrated that pre-anesthesia PVI in PHR at 30° position could predict hypotension during induction with a sensitivity of 67% and a specificity of 62% whereas pre-anesthesia PVI in supine position was non-reliable in predicting hypotension.

### **Conclusion**

Pre-anesthesia PVI in PHR at 30° position may predict hypotension during induction with an acceptable accuracy. And this procedure is probably helpful for assessing high-risk patients susceptible to severe hypotension during induction.