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ORIGINAL ARTICLE

HRV a simple non-invasive tool to evaluate autonomic tone in perioperative period during general anaesthesia

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ABSTRACT

Background:
General anaesthesia causes decrease in both sympathetic & parasympathetic tone. Heart Rate variability (HRV) provides a powerful means of observing the interplay between sympathetic and parasympathetic nervous system. Reduced heart rate variability has been used as a marker of reduced vagal activity and is a valuable non-invasive tool in assessment of cardiovascular autonomic function.

Objectives:
To evaluate the autonomic tone in perioperative period during general anaesthesia by HRV.

Methods:
HRV was recorded for 5 minutes in supine position by using (CARDIART 8408 VIEW) HRV machine. Time domain (SDNN) analysis of HRV was done in the perioperative period. Reduced HRV is indicated by reduced SDNN. The results were statistically analyzed using one way ANOVA & Post –Hoc Bonferroni criterion was used.

Results:
Post Hoc analysis indicated that SDNN was significantly lower in intraoperative period compared to the preoperative period. There was no significant difference between the preoperative & postoperative period.SBP, DBP, MAP & HR were significantly lower in the intraoperative & post operative period. Pair wise comparison of SBP, DBP, MAP & HR between intraoperative & postoperative period was significant.

Conclusion:
The results confirm a significant relationship between HRV preoperatively measured at rest and BP stability during anaesthesia induction. It can be used to measure the peri-operative hypotension & study the circulatory phenomenon in peri-operative subjects. Thus better understanding of the resting pre operative ANS condition has to be done.

Key words: blood pressure, general anaesthesia, heart rate variability.

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