

AB111. 5. An observational study on the effects of propofol-based total intravenous anaesthesia versus vapour-based inhalational anaesthesia on blood pressure and heart rate in women undergoing elective breast cancer surgery

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Background: Both propofol-based total intravenous anaesthesia (TIVA) and vapour-based anaesthesia (VBA) are known to cause alterations in blood pressure and heart rate. It is not known whether one modality has a greater effect than the other. The aim of this study was to determine whether TIVA or VBA following bolus propofol induction has a greater impact on blood pressure and heart rate 5 minutes post-induction of anaesthesia. A secondary aim was to measure the effect of respective anaesthesia modalities on haemodynamic parameters and the need for intraoperative vasopressor drugs.

Methods: A prospective observational study was performed of women undergoing elective breast cancer surgery in Cork University Hospital. Patients received either TIVA or VBA at the preference of the individual consultant anaesthetist. Blood pressure and heart rate values were measured before induction as a baseline, and every 5 minutes post-induction until the end of surgery.

Results: Sixty women undergoing breast cancer surgery were included in this study (TIVA group n=30, VBA group n=30). There was no significant difference in baseline BP and HR between the two groups. The average drop in mean arterial pressure (MAP) from baseline to 5 minutes was less with TIVA than with VBA (21.4 vs. 26.93 mmHg, P=0.09). The mean heart rate (HR) drop from baseline to 5 minutes was less with TIVA than with VBA (10.93 vs. 15.97 bpm, P=0.01). The mean maximum drop in HR from baseline over the course of the surgery was less with TIVA than VBA (14.9 vs. 22.27 bpm, P=0.001).

Conclusions: This study has shown that in this cohort of patients, propofol-based TIVA offers more cardiovascular stability in terms of heart rate both on induction of anaesthesia and intraoperatively than sevoflurane-based inhalational anaesthesia.

Keywords: Anaesthesia; haemodynamic stability; propofol; total intravenous anaesthesia (TIVA)

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