

Comparison Between Bispectral Index Guided Anesthesia and Standard Anesthesia Care in Middle Age Adult Patients Undergoing Modified Radical Mastectomy

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Abstract : Introduction: Cancer is beginning to outpace cardiovascular disease as a cause of death affecting every major organ system with profound implications for perioperative management. Breast cancer is the most common cancer in women in India, accounting for 27% of all cancers. The small changes in analgesic management of cancer patients can greatly improve prognosis and reduce the risk of postsurgical cancer recurrence as opioid-based analgesia has a deleterious effect on cancer outcomes. Shortened postsurgical recovery time facilitates earlier return to intended oncological therapy maximising the chance of successful treatment. Literature reveals that the role of BIS since FDA approval has been assessed in various types of surgeries, but clinical data on its use in oncosurgical patients are scanty. Our study focuses on the role of BIS-guided anaesthesia for breast cancer surgery patients. Methods: A prospective randomized controlled study in patients aged 36-55years scheduled for modified radical mastectomy was conducted in 51 patients in each group who met the inclusion and exclusion criteria, and randomization was done by sealed envelope technique. In BIS guided anaesthesia group (B), sevoflurane was titrated to keep the BIS value 45-60, and thereafter if the patient showed hypertension/tachycardia, an opioid was given. In standard anaesthesia care (group C), sevoflurane was titrated to keep MAC in the range of 0.8-1, and fentanyl was given if the patient showed hypertension/tachycardia. Intraoperative opioid consumption was calculated. Postsurgery recovery characteristics, including Aldrete score, were assessed. Patients were questioned for pain, PONV, and recall of the intraoperative event. A comparison of age, BMI, ASA, recovery characteristics, opioid, and VAS score was made using the non-parametric Mann-Whitney U test. Categorical data like intraoperative awareness of surgery and PONV was studied using the Chi-square test. A comparison of heart rate and MAP was made by an independent sample t-test. #ggplot2 package was used to show the trend of the BIS index for all intraoperative time points for each patient. For a statistical test of significance, the cut-off p-value was set as <0.05. Conclusions: BIS monitoring led to reduced opioid consumption and early recovery from anaesthesia in breast cancer patients undergoing MRM resulting in less postoperative nausea and vomiting and less pain intensity in the immediate postoperative period without any recall of the intraoperative event. Thus, the use of a Bispectral index monitor allows for tailoring of anaesthesia administration with a good outcome.

Keywords : bispectral index, depth of anaesthesia, recovery, opioid consumption

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