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M.B.B.Ch.

Dgree:

Thesis Title: CORRELATION OF DIFFERENT TIME MEASUREMENTS OF
THE SURGICAL PLETH INDEX WITH POSTOPERATIVE PAIN:

A PROSPECTIVE OBSERVATIONAL STUDY.

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ABSTRACT

Background: The Surgical Pleth Index (SPI) has been introduced to monitor intraoperative pain under general anesthesia. So our study was to determine the optimum time to measure intraoperative SPI, which correlates better with postoperative pain.

Subjects and Methods: This prospective observational blind study collected data from 99 female patients scheduled for elective abdominal hysterectomy under general anesthesia. SPI will be recorded 5 minutes after skin incision and 10 minutes before recovery. After recovery, Upon ability to communicate, all patients will be asked to quantify their pain level. The primary outcome is determining which SPI measurement is more correlated with postoperative pain. The secondary outcomes are to evaluate the correlation between the SPI measurements and opioid consumption in the first postoperative 24 hours and define the cut-off value of SPI measurements

Results: In the current study we found that, there was a statistically significant correlation between SPI 10 min before recovery and highest NRS ($r=0.55$, p -value <0.001). The cut-off value, with highest sensitivity and specificity, of SPI 10 minutes before recovery to differentiate between moderate and severe pain was 57. On the other hand, no significant correlation was observed between SPI 5 min after skin incision and the highest NRS. Also, SPI 10 minutes was significantly correlated with postoperative tramadol consumption; however, SPI 5 minutes was not.

Conclusion: SPI is a good indicator for nociception. Pre-arousal SPI score is more correlated with postoperative pain scores and opioid consumption than SPI score after skin incision. Also, SPI 10 minutes before recovery value of 57 was the cut-off value, with the highest sensitivity and specificity, to differentiate between moderate and severe pain.

Keywords: Surgical pleth index, Postoperative pain, Numeric rating scale.