Optimal Range of BIS Monitoring for Balanced Propofol Sedation during Colonoscopy

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Objectives: The purpose of this study was to evaluate the optimal cut-off value of Bispectral index (BIS) for moderate sedation of balanced propofol sedation (BPS) in outpatients during colonoscopy.

Patients and Methods: A total of 30 consecutive patients (ASA I-II), receiving BPS with low-dose midazolam and propofol during colonoscopy, were evaluated. BIS and the Modified Observer’s Assessment of Alertness/Sedation (MOAA/S) scores were recorded every 1 min by single trained observer. And the efficacy and safety of sedation were evaluated.

Results: There was a positive correlation between BIS and MOAA/S scores (correlation coefficient=0.66, p<0.001). Considering the intracluster correlation due to multiple measurements for the same patient, the cut-off value of BIS for the detection of moderate sedation (MOAA/S >3) was 80-81 and the area under the ROC curve estimates (AUC) was 0.88 (95% CI 0.82-0.93). The mean total dose of midazolam was 1.83 mg (±0.38, 1.00-2.00 mg), and the mean total dose of propofol administered was 49.16 mg (±31.21, 20.00-170.00 mg). Endoscopist, sedation nurse and patients showed high satisfaction. There were no significant complication except for temporary hypoxemia.

Conclusions: The optimal cut-off value of BIS to keep moderate sedation is to be 80-81. BIS could complement clinical observation for guidance of moderate sedation.

Key Words: Consciousness Monitors; Conscious Sedation; Propofol; Colonoscopy