SmartPilot® view-guided target controlled infusion anesthesia can be promising for spinal surgery

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Background

SmartPilot® view (SPV) is a new monitor that takes into account hypnotic-opioid interactions and displays current and predicted anesthesia levels. This is the first report utilizing SPV in neuroanesthesia. We aimed to describe our SPV-guided target controlled infusion (TCI) anesthesia experience in two spinal surgery patients who were monitored with evoked potentials.

Case Report

1

27-year old, ASA I, female
Cervical meningioma
TCI – Propofol, Schnider
Duration of operation: 3 hr
Total propofol: 1400 mg
Extubation time: 1 min

2

52-year old, ASA II, male
Tethered cord syndrome
TCI – Propofol, Schnider
Duration of operation: 2.5 hr
Total propofol: 1280 mg
Extubation time: 3 min

Discussion

Intravenous anesthesia without muscle relaxants is usually utilized when neuromonitoring is used during spine surgery. However, avoiding muscle relaxants requires use of higher concentrations of propofol. Excessive propofol induces hypotension, which is independently associated with suppression of evoked responses, hemodynamic instability and prolonged recovery. So titration adequate amount of propofol gains importance (1). Although clinical validation of SPV is limited, recent evidence has shown SPV-guided anesthesia reduces anesthetic consumption (2). Thus, it was assumed that SPV would be relevant for patients undergoing spinal surgery. In the presented cases, quality of SPV-guided anesthesia was found superior to our previous practice in regards of perioperative hemodynamic stability, enhanced recovery with no significant impact on monitoring. The reproducibility and clinical reliability of SPV guided TCI anesthesia during neuromonitoring was evaluated in two patients undergone uneventful spinal surgery.

References:

1. Sloan TB, et al. Lidocaine infusion adjunct to total intravenous anesthesia reduces the total dose of propofol during intraoperative neurophysiological monitoring. J Clin Monit Comput 2014;28:139-47
2. Leblanc D, et al. SmartPilot® view-guided anaesthesia improves postoperative outcomes in hip fracture surgery: a randomized blinded controlled study. Br J Anaesth 2017;119:1022-9