You could be reading the full-text of this article now...

- if you become a subscriber (I am a subscriber 🕐)
- if you <u>purchase this article</u>

If you have access to this article through your institution, you can <u>view this article in OvidSP</u>. Journal of Neurosurgical Anesthesiology:

July 2007 - Volume 19 - Issue 3 - pp 183-189 doi: 10.1097/ANA.obo13e31805f66ad Clinical Reports

## Propofol and Remifentanil Effect-site Concentrations Estimated by Pharmacokinetic Simulation and Bispectral Index Monitoring During Craniotomy With Intraoperative Awakening for Brain Tumor Resection

## Lobo, Francisco MD; Beiras, Aldara MD

## \_ Abstract

Different anesthetic techniques have been suggested for craniotomy with intraoperative awakening. We describe an asleep-awake-asleep technique with propofol and remifentanil infusions, with pharmacokinetic simulation to predict the effect-site concentrations and to modulate the infusion rates of both drugs, and bispectral index (BIS) monitoring. Five critical moments were defined: first loss of consciousness (LOC<sub>1</sub>), first recovery of consciousness (ROC<sub>1</sub>), final of neurologic testing (NT), second loss of consciousness (LOC<sub>2</sub>), and second recovery of consciousness (ROC<sub>2</sub>). At LOC<sub>1</sub>, predicted effect-site concentrations of propofol and remifentanil were, respectively, 3.6±1.2 µg/mL and 2.4±0.4 ng/mL. At ROC1, predicted effect-site concentrations of propofol and remifentanil were, respectively, 2.1±0.3 µg/mL and 1.8±0.3 µg/mL. At NT, predicted effect-site concentrations of propofol and remifentanil were, respectively, 0.9±0.3 µg/mL and 1.8±0.2 ηg/mL. At LOC<sub>2</sub>, predicted effect-site concentrations of propofol and remifentanil were, respectively, 2.1±0.2  $\mu$ g/mL and 2.5±0.2  $\eta$ g/mL. At ROC<sub>2</sub>, predicted effect-site concentrations of propofol and remifentanil were, respectively, 1.2±0.5 μg/mL and 1.4±0.2 ηg/mL (data are mean±SE). A significative correlation was found between BIS and predicted effect-site concentrations of propofol ( $r^2=0.547$ , P<0.001) and remifertanil  $(r^2=0.533, P<0.001)$ . Multiple regression analysis between BIS and propofol and remifertanil predicted effect-site concentrations at the different critical steps of the procedure was done and found also significative (*r*<sup>2</sup>=0.7341, *P*<0.001).

© 2007 Lippincott Williams & Wilkins, Inc.