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**A744**

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9:00 AM - 11:00 AM  
Room Area F

**Comparing Index of Consciousness and Bispectral Index during Propofol Induction**

\*\* Tim Mels, M.D., Barbara Wyler, Jean-Pierre Kalala, M.D., Ph.D., Michel Struys, M.D., Ph.D., Hugo Vereecke, M.D., Ph.D.  
Anesthesia, Ghent University Hospital, Gent, Oost Vlaanderen, Belgium

**Introduction:** The Index of Consciousness(IOC)(Morpheus Medical Systems, Barcelona, Spain) measures cerebral hypnotic drug effect based on spontaneous electro-encephalogram(EEG), using a symbolic dynamics algorithm. We measured IOC(version1.2) and bispectral index(BIS)(Aspect Medical Systems, MA, USA) during a propofol induction. We compared the performance of IOC and BIS as measure for changes in effect-site concentration of propofol( $Ce_{PROP}$ ). We also studied baseline variability in the awake patient.

**Methods:** After ethics committee approval and patients' informed consent, we included 15 ASA I and II patients (10 female, 5male), aged  $50(\pm 15)$  years, weight  $72(\pm 14)$  kg, height  $167(\pm 9)$  cm. For BIS, we used a BIS<sub>XP</sub> sensor (Aspect Medical Systems) and for IOC, three Blue Sensors(Ambu, Ballerup, Denmark). Propofol 1% was administered at 300ml/h with RUGLOOPII(Demed, Temse, Belgium) until maximum burst suppression was found on EEG. RUGLOOPII calculates the time-synchronized  $Ce_{PROP}$ , using the Schnider model, with a fixed time to peak effect of 1.6 min. <sup>(1,2)</sup> All data was extracted in 5 seconds intervals. The coefficient of variation (CV) is calculated during 2 minutes of measurement in all awake patients. Prediction probability(pK) was calculated as a measure of accuracy for detecting change in  $Ce_{PROP}$ . <sup>(3)</sup>  $Ce_{PROP}$  was rounded to 0 decimals. Statistical significance was tested by an unpaired t-test ( $p < 0.05$ ).

**Results:** No data was excluded. The individual **BIS and IOC versus  $Ce_{PROP}$**  is shown in respectively figure 1 and 2. The **CV for BIS and IOC** was respectively **11.5** and **15.3**, indicating a higher variability at baseline for IOC. Mean pK's for BIS and IOC were not statistically different, **0.89 ( $\pm 0.03$ )** and **0.89 ( $\pm 0.05$ )** respectively.

**Discussion:** Although baseline variability of IOC is higher compared to BIS, the all-round performance for predicting  $Ce_{PROP}$  during propofol induction is comparable. The high CV for BIS is caused by one outlier with a low BIS while being awake. After exclusion, CV for BIS was 3.1, which is more in line with CV results from other studies.

**Conclusion:** During induction of propofol the accuracy to measure changes in  $Ce_{PROP}$  appears to be comparable between IOC and BIS, although IOC might be improved for measurements in the awake.

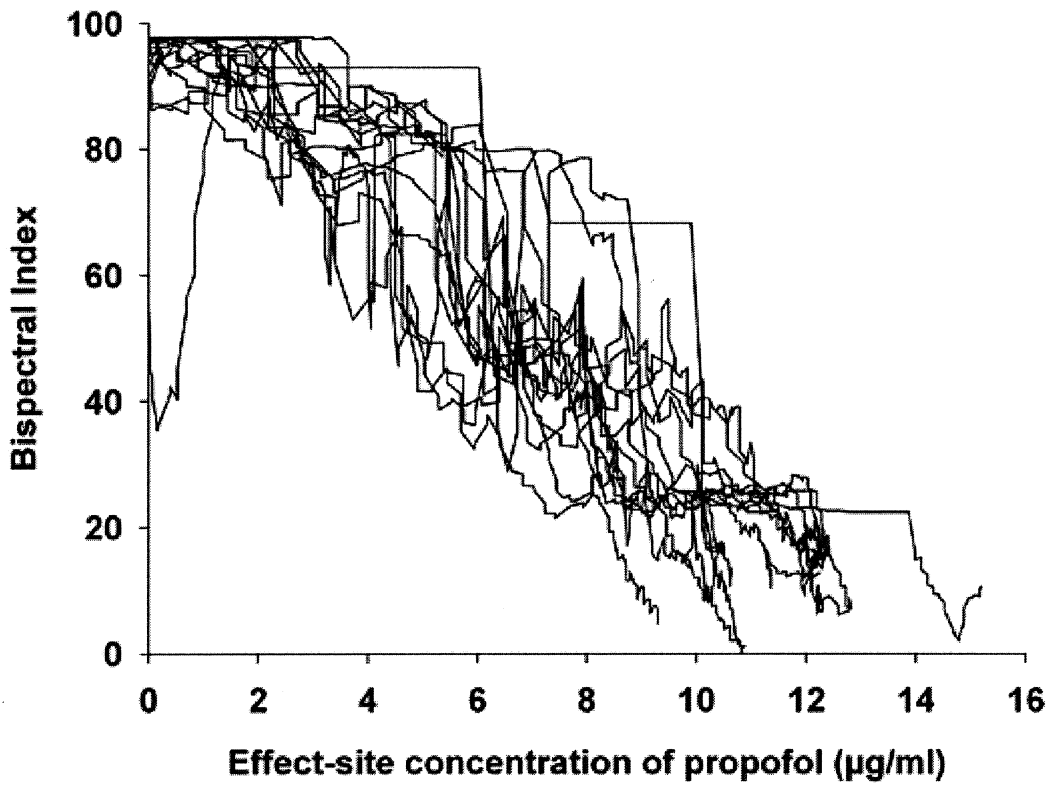
**References:**

1. Schnider TW et al Anesthesiology 1998;88:1170-82.
2. Minto CF et al, Anesthesiology 2003;99:324-33.
3. Smith WD et al, Stat Med 1996;15:1199-215.[figure1][figure2]

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**Figure 1**

**Figure 1**



**Figure 2**

**Figure 2**

