**Depth of Sedation in Upper GI Endoscpy**

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It is widely held that blood propofol concentrations at the time of wakeup are about 50 percent of those used for anesthesia maintenance. As a result, it is proposed that context sensitive half time of propofol should be used to decide the timing of discontinuation of its infusion. EEG suppression is widely used for calculation of equilibrium constant and the half-life of equilibrium. EEG derived variables like PSI (Patient state Index) or BIS (bispectral index) are accepted as reliable monitors of depth of sedation.

**Methods:** After IRB approval, 50 patients undergoing advanced endoscopic procedures anestheised with propofol (bolus and infusion) were studied. The PSI scores (SEDLine measured) were noted by an independent observer at the time of successful gastroscope insertion and eye opening (to verbal command)at the end of the procedure. Anesthesia providers were blinded to PSI data.

**Results:** The mean values of PSI scores for wakeup were 66.57 (13.92) and at the time of successful scope insertion 67.87 (17.84). Paired T test showed the values to be statistically similar (p=0.65).Meadian values were compared using Wilcoxon rank sum test, which also showed values to be similar (p=0.857)

**Conclusions:** It is likely that the factors determining response to noxious stimulation (like insertion of gastroscope) or recovery from anesthesia are beyond that can be measured either by EEG analysis or effect site concentration. Further refinements in EEG analysis or a combined index (that takes into account additional factors) is warranted. In the meantime, both patients physical responses (movement, hemodynamics) and EEG monitoring devices like SEDLine should be used to titrate propofol. Moreover, in the absence of an EEG monitor, it is important to resist the temptation to reduce the infusion rates drastically or stop the infusion much before the end of surgery. Although context sensitive halftimes can predict 50 percent decrement times, letting the plasma concentrations to dip by half might risk awareness.