**The Effect of Ketamine and Rocuronium on the Neurosense WAVcns Index During Steady-State Anesthesia with Propofol and Remifentanil**

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**Background/Introduction:** We tested the effects of ketamine (KET) and rocuronium (ROC) on a wavelet transformation algorithm (WAVCNS) of the electroencephalogram, as calculated by the Neurosense® monitor (NeuroWave Systems Inc., algorithm v.3.0.0.1). We reanalyzed raw electroencephalogram signals obtained from a prior study. 1

**Methods:** After ethics’ committee approval, 41 patients were allocated to four groups. Baseline measurements were performed after implementing calculated steady-state anaesthesia with propofol and remifentanil. No additional drugs were given in the CONTROL group. The KET group received a bolus of ketamine (0.4mg/kg) followed by a 1 mg/kg/h continuous infusion. The ROC group received rocuronium (0.9 mg/kg). The ROC+KET group received both. All data was stored during 15 minutes after baseline. WAVCNS was extracted post-hoc from raw EEG measured on the mastoid position with the A-line® AEP monitor (Danmeter). Mean WAVCNS changes from baseline were tested within each group and compared with CONTROL.

**Results:** Compared to baseline, WAVCNS increases in KET (p<0.05 after 7-9 minutes) and decreases in ROC (p<0.05 after 10-12 minutes). No significance was found in ROC+KET. When compared with CONTROL, KET did not show significant difference on any minute. (Figure 1 A) ROC and ROC+KET decrease compared to CONTROL . (Figure 1 B-C)

**Conclusion:** Rocuronium decreases WAVcns when calculated from EEG on a mastoid channel. Conversely, WAVCNS seems to be only limitedly affected by ketamine in our dataset. This came in contrast to our previous results using other EEG-based indices. A prospective study focusing on fronto-temporal channels is advisable to confirm or reject these results.

**References**

1. Vereecke HE, et al. Anesthesiology 2006; 105: 1122-34

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