analysis for MTNR1B receptor SNP, rs10830963, as part of a larger study. Using a validated method, CHART-DEL, all charts were reviewed and scored for the likelihood of delirium without knowledge of the results of the MTNR1B gene polymorphism. CHART-DEL has a sensitivity of 74%, specificity of 83%.[5,6] It was decided a priori patients rated as probable and definite delirium would be categorized as having delirium. The Fisher exact was used for analysis.

Results: Genotyping for the MTNR1B gene was acceptable in 80 subjects of which 18 (22.5%) had delirium. Four (57.1%) of patients with the risk genotype had delirium versus only 14 (19.2%) without the genotype, $P = 0.04$.

Conclusions: Although our study was limited to cardiac surgery, has relatively small sample size, and retrospectively assessed for the presence of delirium, the significant correlation of the risk genotype of the MTNR1B melatonin receptor with delirium is intriguing and warrants further prospective studies. Our data supports a role for the MTNR1B melatonin receptor in the pathogenesis of postoperative delirium.

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[SNACC-48] The Impact of Hypotension During Stroke Intervention May Depend on Type of Anesthesia and Stroke Severity

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Introduction: Recent studies have linked intraprocedural hypotension to poor neurological outcomes in stroke patients receiving thrombectomies under both monitored anesthetic care (MAC)[1] and general anesthesia (GA).[2] The GA study included only 60 patients so those authors were unable to examine blood pressure thresholds for GA patients. We hypothesized that decreases in MAP would have a similar effect in patients whether they received MAC or GA.

Methods: We retrospectively examined patients who were successfully reperfused (modified thrombolysis in cerebral infarction scores of 2b or 3) at our institution from 2010 until 2015. We identified 439 such patients with complete anesthetic, hemodynamic, and outcome data. Percentage MAP drop was defined based on the change from baseline to the lowest recorded MAP before mTICI 2b/3 reperfusion. Stroke severity was based on the admission NIH stroke scale (NIHSS) score. Good outcome was defined as a modified Rankin score (mRS) at 90 days of 0 to 2, which corresponds to functional independence.

Results: In our cohort the rate of good outcome was 58% in the 297 patients who received MAC and 39% in the 142 patients who received GA. MAP fell more than 20% from baseline in 62% of MAC cases and 84% of GA cases. As shown in the figure, in patients with strokes of intermediate severity (NIHSS 16 to 20) keeping MAP within 10% of baseline was associated with substantially more good outcomes for both GA and MAC patients. In those with severe strokes (NIHSS > 20) tight hemodynamic control appeared to have a smaller impact on outcome for both anesthetic groups. For less severe strokes (NIHSS < 16) hypotension appeared to have a more profound impact for GA patients than for MAC patients.

Conclusions: Maintaining MAP within 10% of baseline was associated with higher rates of good outcome in all subgroups studied. Our analysis was limited by the small proportion of patients who maintained MAP within 10% of baseline, especially in the GA group. However, such tight hemodynamic control seemed to be particularly beneficial to all patients with NIHSS 16 to 20 and patients with NIHSS < 16 who received GA. Anesthesiologists should try to maintain MAP within 10% of baseline values for both MAC and GA cases.

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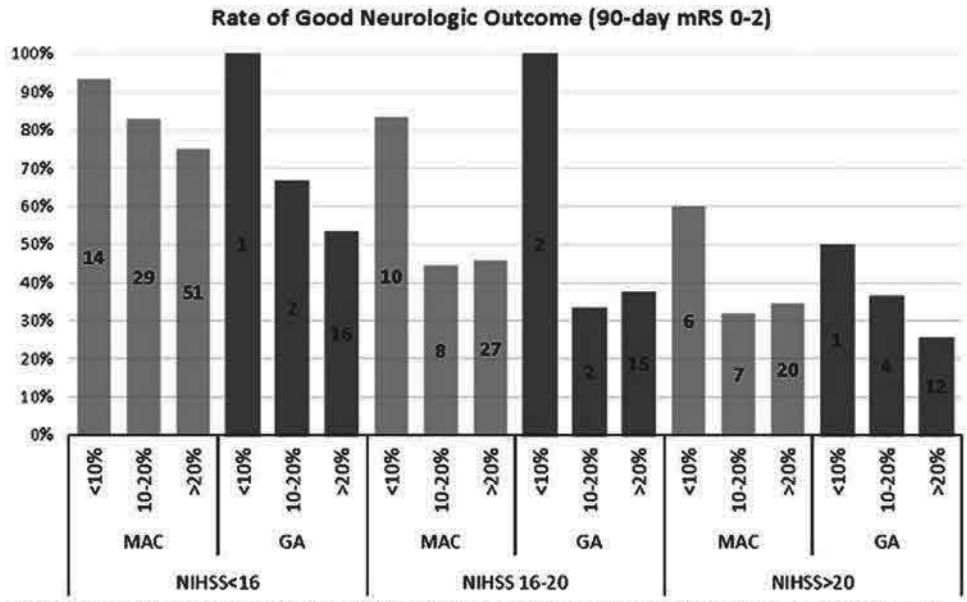
[SNACC-49] Assessment of the Opioid Effect on the Pupillary Pain Index



The y-axis shows the percent of patients in each subgroup who achieved a good outcome and the numbers on each bar are the number of patients in that subgroup who achieved a good outcome. Column percentage labels represent the fall in MAP prior to TICI 2b/3 reperfusion calculated as (baseline MAP-lowest MAP)/baseline MAP. Subgroups who received MAC are shown in light grey bars and those who received GA are shown in dark grey.

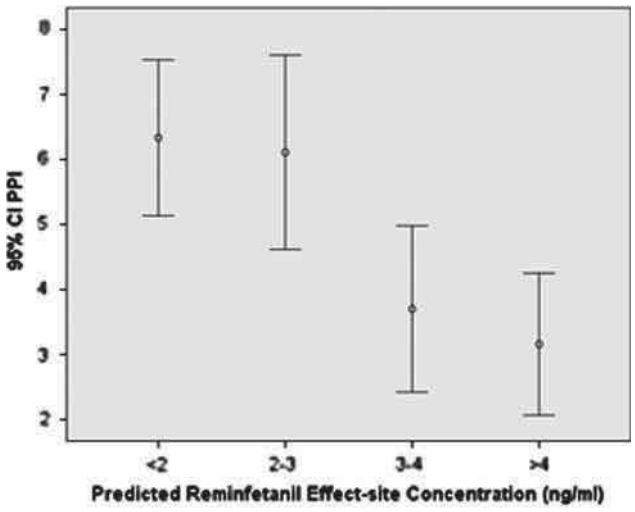


Figure 1: Pupillary Pain Index (PPI) mean and 95% CI, for 4 different remifentanil EC levels. (ANOVA, p<0.001)

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Background: The importance of personalized medicine is becoming increasingly recognized in anesthesia. Titration of the different drugs used in anesthesiology has become possible due to monitors that allow us to measure the different effects. However, regarding the analgesic effect, there are not many available solutions yet. The Pupillary Reflex Dilation has been studied as a surrogate for measuring the nociception/antinociception balance of patients, both in the operating theater as well as in intensive care.[1] The aim of this study was to assess the Pupillary Pain Index (PPI) association with different concentrations of remifentanil.

Methods: This was an observational prospective study, where 34 consecutive patients were enrolled. Patients scheduled for neurosurgical procedures, with general TIVA anesthesia with propofol and remifentanil were considered when no premedication was used. Induction began with an infusion of remifentanil targeted for a constant concentration using Minto PK Model and then an infusion of propofol at 200 mL/h was started until loss of consciousness was observed. Afterwards, an infrared portable pupillometer (AlgiScan—IDMed, France) was used to assess the Pupillary Dilation Reflex and its derived index PPI. Following this measurement, remifentanil concentrations could be increased or decreased if deemed necessary by the anesthesiologist. The PPI consists in measuring the pupillary dilation in response to a continuously increasing electric stimulus discharge, that stops when $>13\%$ dilation from baseline is achieved, or when 60 mA is reached. PPI measurements were taken after loss of consciousness and before surgery, at moments when no other stimulus were present. For each measure of PPI the predicted effect-site concentration (EC) of remifentanil (Minto PK model) and of propofol (Schnider PK Model); and the BIS value were noted. Data are mean ± SD or %.

Results: A total of 78 measures of PPI were done. Patients' data were: 57 ± 15 years; 73 ± 21 kg; 162 ± 8 cm; 60% female; 11.5% ASA I; 80.8% ASA II; Remifentanil EC 2.4 ± 1.5 ng/mL; propofol EC 3.7 ± 1.3 ug/mL; BIS 46.1 ± 8.2; PPI 4.8 ± 3. A correlation was observed between the remifentanil EC and PPI ($R=-0.46$, $P<0.001$), but not between PPI and propofol EC or BIS. A correlation was observed between BIS and propofol CE ($R=-0.26$, $P=0.028$), but not with remifentanil. Tukey HSD test showed that the different is mainly due to concentrations <3 versus ≥ 3 ng/mL.

Conclusions: We found a significant correlation between the remifentanil concentration and PPI, showing that PPI discriminates different levels of analgesia. No correlation was found with propofol or BIS. However, there was no clear discrimination between all levels of remifentanil concentrations analyzed. Further research should be done, with more data and more stratified levels of remifentanil.

ACK: LAETA-INEGI.

Reference:

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[SNACC-50] Analgesic Interpatient Variability of Remifentanil Assessed Through Pupillary Dilation Reflex

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Background: Although there has been significant focus on unconsciousness and amnesia, identifying the neural signatures of effective analgesia has received less attention.[1] Currently, appraisal of intraoperative nociception is mostly done through the assessment of the autonomic response to noxious stimuli, whether it is through heart rate variability, heartbeat intervals, plethysmographic pulse wave amplitude, skin conductance or pupillary response.[2] The known wide inter-patient variability of the hypnotic effect, namely in the amount of propofol needed to achieve loss of consciousness, led us to question if this variability also happened for the analgesic effect. In this

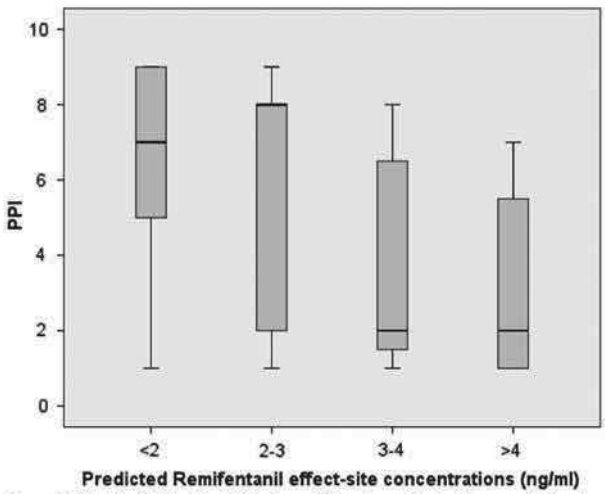

Figure 1: PPI data distribution in the four different remifentanil concentration levels.

Table 1: PPI values for the different Remifentanil concentration levels.

Remifentanil EC	N	PPI (mean±SD)	PPI (min – max)	PPI – IQ range and %
< 2 ng/ml	21	6.33±2.6	(1 – 9)	[5-9] 80%
2- 3 ng/ml	18	6.11±3	(1- 9)	[2 - 8] 300%
3-4 ng/ml	20	3.7±2.7	(1 – 8)	[1.25 – 1.75] 440%
> 4 ng/ml	19	3.16±2.3	(1 – 7)	[1 - 6] 500%