

## **8AP05-12 - NoL Index performance in patients with beta-blockers**

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**Background and Goal of Study:** Chronic Beta blockade (BB) causes alterations in physiological parameters and in their variation in response to various stimuli like pain and nociception. NOL (Nociception Level) is an index of nociception based on a non-linear combination of HR, heart rate variability, photo-plethysmograph wave amplitude, skin conductance, skin conductance fluctuations, and their time derivatives. Previous data showed high sensitivity and specificity of NoL index to painful stimuli.[1] Being based on physiological parameters potentially influenced by BB, it is interesting to evaluate NOL performance in such cases. A subgroup of our population with chronic BB treatment was excluded from previous analysis. We evaluate the performance of NoL to accurately assess nociception in this subgroup compared to patients with no BB.

**Materials and Methods:** 79 patients scheduled for elective surgery under general anesthesia were enrolled. 10 patients took BB medications. 12 patients were technically excluded from analysis [1] which included 58 patients in the non BB group (General) and 9 patients in the beta blockers group (BB). NOL index was evaluated before and after various stimuli: tetanic stimulation with and without analgesia, intubation, 1st skin incision/trocar insertion and a period of no pain.

### **Results and Discussion:**

- NOL values before, after and in reaction to stimuli were not statistically different between the general and BB groups.
- NOL Index changed significantly after intubation and incision and remained unchanged around non painful stimuli in BB group.
- NOL values increased after tetanic stimuli in the BB group by 7.017 and 8.852 respectively, on the borderline of significance, probably due to the small number of patients.
- For cutoff 15 NOL points, calculated sensitivity and specificity of NOL Index in BB patients was 77.8% and 100%, respectively.

**Conclusion(s):** Although based on a small sample, the NOL Index changed significantly after clinical noxious stimuli in patients with chronic BB treatment. Since NOL Index is based, among others, on heart rate and derived parameters, this important observation contributes to its reliability. Further

studies with larger samples are needed to confirm that observation.

**References:** Edry R, et al. Intraoperative validation of the Nociception level Index. A non-invasive nociception monitor. *Anesthesiology* 2016;125(1):193