

# Medasense announces positive results from clinical outcome studies using the NOL<sup>®</sup> monitoring technology for optimized pain control

**The leading study, investigating NOL-guided opioid administration, demonstrated that using the NOL technology significantly reduced opioid-consumption and improved hemodynamic stability in patients undergoing major surgery.**

Ramat Gan, Israel, October 29<sup>th</sup> – Medasense Biometrics Ltd., developer of innovative systems and applications to objectively assess the physiological response to pain, today announced positive results from several studies using the NOL<sup>®</sup> monitoring technology. NOL technology helps clinicians optimize the delivery of pain medication by assessing patient’s nociceptive (pain) state in situations where patients are unable to communicate, especially in critical care and surgery under general anaesthesia.

All studies evaluated the role of NOL (the nociception level index, presenting the patients’ pain state on a scale of 0 to 100 on the PMD-200 monitor) to provide superior pain assessment for improved outcomes.

In the first study<sup>1</sup>, Professor Albert Dahan and his team from Leiden University Medical Centre (LUMC), aimed to investigate whether NOL-guided administration of opioid analgesics during surgery versus standard practice would affect opioid use and patient outcomes. Awarded among the 10 Best Abstracts of Clinical Science, Prof. Dahan presented the study results at the Anaesthesiology 2018 conference in San Francisco, U.S.A.

The study included 80 patients who underwent elective major surgery during remifentanyl/propofol anaesthesia with NOL-guided analgesia, versus standard of care. Current standard of care relies on the discretion of the attending anaesthesiologist to administer opioids based on changes in a patient’s heart rate and blood pressure. The results showed that NOL-guided opioid administration led to 33% less intraoperative opioids and 80% less hemodynamic hypotensive events. The researchers concluded: “opioid administration based on NOL is clinically relevant and improves patient outcome.”

Mrs. Galit Zuckerman-Stark, Medasense CEO and founder, said today: **“A growing body of evidence indicates that intraoperative hypotension increases the risk of myocardial injury, acute kidney injury, and mortality. The study demonstrates the importance of NOL monitoring during surgery and its potential to reduce the probability of postoperative complications.”**

In the second study<sup>2</sup>, Professor Patricia Lavand’homme and colleagues from the Université Catholique de Lovain in Belgium, sought to assess the potential link between the intraoperative NOL values and postoperative recovery after knee arthroplasty with Opioid-Free Analgesia Protocol. Following an analysis of 75 adult patients, the results, presented last September at the International Association for the Study of Pain<sup>®</sup> (IASP) 2018 conference, showed that NOL correlated with pain at mobilization on day 1 following surgery, and pain at movement 3 months following surgery. The authors concluded “control of intraoperative nociception (assessed by NOL) is important as it may predict early and longer-term postoperative pain”.

Mrs. Zuckerman-Stark added: “The latest clinical evidence clearly indicates the potential of our technology to improve patient care and empower clinicians in this mission. We believe these results are just the first marker of the potential benefit NOL technology holds, with many others to come in the near future.”

### **About Medasense**

Medasense develops innovative medical devices and applications in the field of monitoring the physiological response to pain. Following extensive multidisciplinary research, the company developed the novel NOL<sup>®</sup> (Nociception Level Index) – a multiparameter composite of autonomic signals. A proprietary signal-acquisition-sensor platform, and advanced algorithms acquire, process, and analyse multiple nociception-related physiological parameters and their various derivatives, to identify the nociception-related patterns, and reflect a patient’s nociceptive state on a scale of 0-100 on the PMD-200 monitor. The breakthrough NOL technology paves the way for precision medicine, allowing for personalized and optimized pain care.

For more information: [www.medasense.com](http://www.medasense.com)      [info@medasense.com](mailto:info@medasense.com)

\* PMD-200 and its NOL index are commercially available in Europe, Canada, Australia and Israel. Not commercially available in the U.S.A.

### **Reference:**

1. Nociception Level (NOL)-guided Analgesia: Influence on Opioid Consumption and Hypotensive Events During Propofol/remifentanil anesthesia. Albert Dahan, Fleur S. Meijer, Suzanne Broens, Monique van Velzen, Christian Martini. “Best of Abstracts: Clinical Science”, ASA Annual Meeting 2018, SF, U.S.A.
2. Intraoperative nociception monitoring and postoperative recovery after knee arthroplasty P. Lavand’homme, E. Thienpont, M.N. France. The International Association for the Study of Pain<sup>®</sup>(IASP), 2018, Boston, U.S.A.