New Study from Japan Shows NOL-Guided Analgesia Reduces Intraoperative Opioids and Improves Pain up to 3 Days Post-Surgery

Ramat Gan, Israel, May 2024 — A new study has found that monitoring pain response levels during surgery with NOL- Nociception Level Index® technology can help reduce intraoperative opioid usage and postoperative pain up to 3 days after surgery. The study, titled 'Effect of nociception level-directed analgesic management on opioid usage in robot-assisted laparoscopic radical prostatectomy: a single-center single-blinded randomized controlled trial (NOLDOR study)[1], assessed the clinical utility of NOL guided opioid dosing.

NOL monitoring provides a reliable index to objectively detect and quantify noxious stimuli during anesthesia, when patients can't communicate, guiding the clinical team in providing personalized opioid dosing for each patient. Earlier studies have shown that NOL-guided analgesia resulted in reduced intraoperative opioid consumption, leading to fewer intraoperative hypotensive events,[2] and other studies have shown how NOL-guided analgesia can reduce postoperative pain scores.[3]

The study, independently conducted by Nara Medical University, Japan was presented at the 2024 World Congress of Anesthesia and published in the Journal of Anesthesia. The study followed 50 patients undergoing robot-assisted laparoscopic radical prostatectomy randomized to NOL guided opioid dosing or standard of care groups. In the NOL group there was a 20% reduction in opioid requirement without an increase in serum inflammatory markers with significantly lower pain at rest 2h postoperatively and on movement at all time points up to day 3 post-surgery.

Dr. Nobuhiro Tanaka, lead researcher on the study, commented, "Our findings demonstrate that NOL-directed analgesic management not only reduces remifentanil consumption without increasing inflammatory markers but also improves postoperative pain scores suggesting that personalized anesthesia leads to meaningful patient benefits during recovery from surgery. This has significant implications for improving patient care and opioid administration in the perioperative period."

"This latest study showing reduced pain even three days after surgery represents important progress on our mission to help all patients suffer less from pain and the adverse effects of pain medication" says Galit Zuckerman-Stark, CEO & Founder of Medasense.

About Medasense and NOL – Nociception Level Index® Technology

Medasense is transforming pain management with its breakthrough technology that empowers clinicians to optimize and personalize pain control, significantly reducing the risk of pain or of overmedication. The company's flagship product, the PMD-200™, equipped with the NOL-Nociception Level Index®, leverages advanced artificial intelligence and a proprietary non-invasive sensor system. This unique platform provides objective monitoring and quantification of a patient's pain response, making it an essential tool in operating room and critical care unit settings where patients cannot communicate their pain levels. The PMD-200 is the first and only monitor to be authorized by the FDA for pain measurement for anaesthesiology. It has been used in over 100,000 surgeries worldwide, and is commercially available in the US, Europe, Canada, Latin America and Israel.

Medasense recently announced a strategic distribution agreement in Japan with Nihon Kohden.

Watch Medasense's 1-minute video

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2. Fleur S. Meijer, Chris H. Martini, Suzanne Broens, Martijn Boon, Marieke Niesters, Leon Aarts, Erik Olofsen, Monique van Velzen, Albert Dahan. Nociception-guided versus Standard Care during Remifentanil–Propofol Anesthesia: A Randomized Controlled Trial. Anesthesiology (2019); 130:745–755
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