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Opioid sparing multimodal analgesia enhances surgery recovery and reduces chronic postoperative surgical pain

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Abstract---MMA was one important component in enhanced recovery after surgery (ERAS) 2. MMA combines opioid and non-opioid medication through different routes and mechanisms of action and covers the whole perioperative period, thus minimizing opioid use and preventing chronic post-surgical pain (CPSP)^{3, 4}. There was consensus that MMA could avoid opioid overdose originated from poor acute post-surgical pain control with opioid-dominant pain management in the era of opioid epidemic.

Keywords---opioid sparing, multimodal analgesia, reduces chronic, postoperative.

Introduction

We recently presented a case report of a multimodal analgesia (MMA) protocol on a 46-year-old female with morbid obesity undergoing laparoscopic sleeve gastrectomy¹. MMA was one important component in enhanced recovery after surgery (ERAS)². MMA combines opioid and non-opioid medication through different routes and mechanisms of action and covers the whole perioperative period, thus minimizing opioid use and preventing chronic post-surgical pain (CPSP)^{3, 4}. There was consensus that MMA could avoid opioid overdose originated from poor acute post-surgical pain control with opioid-dominant pain management in the era of opioid epidemic⁵.

The MMA protocol in this case included fentanyl 250µg, ketamine 50mg, dexamethasone 10 mg, long-acting dinalbuphine sebacate (DS, Naldebain) 150mg/2ml, ultrasound-guided transversus abdominis plane (TAP) block with lidocaine 0.5% 20ml plus fentanyl 100µg before skin incision, and acetaminophen 1gm and ketorolac 30mg at PACU. The patient recovered well with no further analgesics taken at ward and was discharged on post-operative day ⁴. In the following four months, no analgesics were taken or prescribed and no post-surgical complication was reported¹.

The authors applied an MMA protocol, including DS, a new non-controlled opioid medication with long-lasting analgesic effects for approximately 7 days¹. Compared to morphine, DS produced less dependence, less sedation, and less respiratory depression due to its different mechanism of action¹. DS was newly introduced in Taiwan in 2017, thus few studies included DS in MMA protocol⁶. In future, we suggest better MMA protocol should be started from pre-operative period, for example, the day before surgery, and extended to post-operative period and even after discharge from the hospital. By doing so, pain transduction could be blocked at the very beginning and covered the whole operation and recovery period⁴. On top of that, traditionally, heart rate, blood pressure and pupil sizes are clinically used to evaluate the state and depth of analgesia, which is subjective and non-real-time. Thus, we suggest combining intraoperative pain monitoring to precisely and objectively for the adequate blockade of noxious stimuli input in real time, such as surgical pleth index (SPI) or analgesia nociception index (ANI) to guide the analgesics administration during operation⁷.

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