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Short Report

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Equianalgesic Conversion from Intrathecal Morphine to Another Regimen is Still Uncertain

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Short report

There is lack of experience regarding the conversion from Intrathecal (IT) morphine to another regimen and we have never faced a surgical patient that needed this kind of conversion. For these two reasons, we think it is necessary to explain our approach.

A 69-year-old female was scheduled for a L4 pedicle subtraction osteotomy for severe sagittal imbalance correction. She had a 50-meter walking distance claudication and was unable to stand upright. She was under chronic pain treatment with intradural morphine for 17 years; the morphine pump was programmed to deliver 1.6 mg over 24 hours by continuous infusion with a steady administration for over four months. She was also taking clonazepam 1 mg once a day (qd), venlafaxine 150 mg qd, and paracetamol as needed. The patient and her relatives reported drowsiness.

She was admitted to the hospital one week before surgery to switch from intrathecal morphine to percutaneous fentanyl. The morphine weaning process was as follows: i) 1.2 mg during 48 h; ii) 0.99 mg during the following 72 h; and iii) the infusion pump was stopped on the sixth day after the first dose reduction. Simultaneously, 12 micrograms of percutaneous fentanyl were initiated on the third day of the weaning process (by the time of the second reduction) and increased to 25 micrograms when the pump was stopped. The patient was closely monitored for abstinence or any other symptom. On the 7th day, she presented with anxiety, agitation, increased heart rate (110 bpm), hypertension, diaphoresis, and discomfort (Clinical Opioid Withdrawal Scale [1] (COWS) 12) and was successfully treated with 0.25 mg of clonazepam, 4 mg of intravenous morphine and 5 mg of subcutaneous morphine.

On the next day, she went to the theatre with 25 micrograms percutaneous fentanyl, presenting tolerable pain and no withdrawal symptoms. Postoperatively, she received 50 micrograms of percutaneous fentanyl for five days, 37 micrograms for 13 days and 25 micrograms thereafter; she also needed morphine for breakthrough pain between 6-12.5 mg per day during the first 7 postoperative days. No intolerable pain or withdrawal symptoms were reported at any time. Patient global assessment was good for the process. She was discharged on the 34th postoperative day

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with 25 micrograms of fentanyl, clonazepam, paracetamol and metamizole only if needed; by that time, she could walk along the hallway with a walker, and she kept awake during the day. Ultimately, the calculated equianalgesic oral to IT morphine ratio was 50:1 throughout the procedure, with a variability of 43–83:1 (calculated as 1 mg of oral morphine was equianalgesic to 10 micrograms of fentanyl) [2].

We could only find two case-reports in the literature. Sylvester et al.,[3] used an equianalgesic oral to IT ratio of 12:1, whereas Gebhardt and Kinney [4] reported good results with Krames' equianalgesic conversion. Sylvester et al., [3] previously revised this subject and found no primary literature available, being the equianalgesic conversion ratios unknown. The available information was limited to only two recommendations (Krames and Cynergy Group Opioid Calculator) [5,6] on converting systemic morphine to an intraspinal administration, instead of converting it the other way around. Additionally, such directional differences in equianalgesia remained to be evaluated [3].

Our conversion ratio is lower than the recommended by the Cynergy Group recommendation (90:1) and substantially lower than the one recommended by Krames (300:1). We chose transcutaneous fentanyl due to the ease of administration, the higher steadiness of opioid administration through this route and due to our personal experience managing this type of medication during the surgical procedure, which allows a closer control of patients' evolution and a proper opioid titration.

So far, we think it is paramount to adopt a personalized equianalgesic conversion for each patient based on their individual clinical response until there is more consistent data about equianalgesic dose from intrathecal morphine to another regimen.

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