

Pain, Narcotic Use, and Functional Outcomes in Revision TKA with & without Adductor Canal Block

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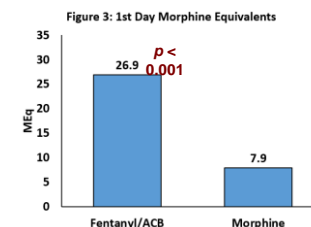
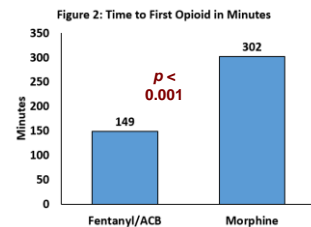
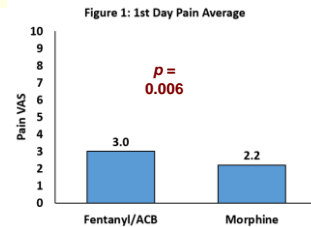
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Background

Adductor canal blocks have emerged as the optimal regional anesthetic blockade for pain control for total knee arthroplasty (TKA). Further, intrathecal analgesics differ in duration of action, side effect profile, and efficacy. **The purpose of this study was to compare inpatient and early post-operative function, medication side effects, and four-month outcomes in patients who received intrathecal morphine alone compared to patients who received intrathecal fentanyl along with an adductor canal block (ACB).**



Methods

Sample

- With IRB approval, 210 consecutive aseptic revision TKAs performed by a single surgeon between 2010 and 2017 were retrospectively reviewed.
- 43 exclusions for lack of spinal opioid, non-morphine/ fentanyl spinal analgesia, fentanyl without ACB, morphine with ACB, or case involved extensor mechanism repair or constraining implant.
- Final analysis sample of 167 cases (n=110 fentanyl/ACB, n=57 morphine).

Pain

- Postoperative (PO) day 1 inpatient pain was assessed using Visual Analogue Scale (VAS) pain scores, opioid consumption was measured in morphine equivalents, and minutes to first opioid were calculated.
- Opioid side effects including urinary retention, nausea/vomiting, and pruritus were documented.

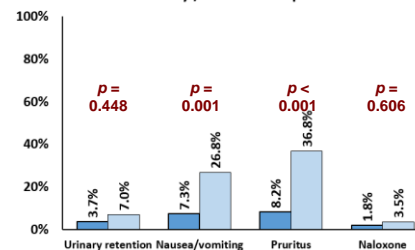
Range of Motion (ROM)

- The last ROM prior to hospital discharge and ROM at four-months postoperatively were compared to baseline ROM established at the pre-surgical visit.

Four Month Patient Reported Outcomes

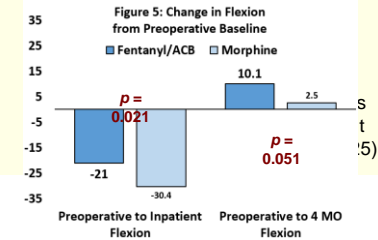
- Additional functional outcome measures included prospectively collected preoperative and four-month pain while walking on level ground, pain while climbing stairs, and University of California Los Angeles (UCLA) Activity Level score (1 = complete inactivity and dependence on others; 10 = regular

Figure 4: Side Effects of Spinal Opioid



Results

- Average PO day 1 pain was significantly lower (Figure 1), time to first inpatient opioid was longer (Figure 2), and less total morphine equivalents were consumed (Figure 3) in the morphine compared to the fentanyl/ACB group. However, morphine patients experienced significantly more nausea/vomiting and pruritus (Figure 4).
- As shown in Figure 5, morphine patients lost significantly more flexion between preoperative baseline and hospital discharge



Conclusion

Intrathecal morphine patients reported less inpatient pain and consumed less opioid, which most likely reflects morphine's longer half-life. Improved 4-month ROM in the fentanyl/ACB group may reflect the quadriceps-sparing nature of ACBs. It is also possible that the operative field in revision TKA extends beyond the sensory protection of ACBs. Further research is required to elucidate the relative impact of ACBs on primary vs. revision procedures.

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