**Supplementary Table 2.** Summary of key results from studies evaluating systemic analgesics, systemic analgesic adjuncts and regional analgesia used to support the recommended interventions in patients undergoing complex spine surgery.

| Study | Study design | Pain scores | Total opioid consumption | Baseline analgesia |
| --- | --- | --- | --- | --- |
| ***Preoperative*** | | | | |
| *NSAIDs* | | | | |
| Pinar H et al, 20177 | Ibuprofen 800 mg IV (n= 21) vs placebo (n=21) | Favours ibuprofen group in the two first hours | Favours ibuprofen group in the 48 first hours | Pregabalin, acetaminophen and morphine PCA |
| ***Intraoperative*** | | | | |
| *NSAIDs* | | | | |
| Chang WK et al, 20139 | Morphine PCA (n=30) vs Tenoxicam+Morphine PCA (n=28) vs Tenoxicam+Morphine PCA + Tenoxicam 20 mg (n=26) | NS | Favours TM and T+TM groups | Morphine PCA |
| Jirarattanaphochai K et al, 20088 | Parecoxib mg (n=60) vs saline (n=60) | Favours parecoxib group at rest and at movement | Favours parecoxib group | Morphine PCA |
| *Ketamine* | | | | |
| Hadi BA et al, 200919 | IV remifentanil (n=20) vs IV remifentanil + ketamine (n=20) | NS | Favours remifentanil + ketamine | IV morphine |
| Loftus RW et al, 201020 | IV bolus of ketamine and continuous infusion (n=52) vs placebo (n=50) | Favours ketamine group from PACU to 6 weeks postoperatively | Favours ketamine group after 48h | Morphine, fentanyl or hydromorphone PCA |
| Nielsen RV et al, 201718 | IV bolus of ketamine and continuous infusion (n=75) vs placebo (n=75) | NS | Favours ketamine group | Morphine PCA and acetaminophen |
| Subramaniam et al, 201123 | IV bolus of ketamine followed by a continuous infusion for 24h (n=15) vs placebo (n=15) | NS | NS | Hydromorphone PCA + epidural bupivacaine |
| Pacreu et al, 201221 | IV methadone + ketamine (n=10) vs methadone alone (n=10) | NS | Favours methadone + ketamine group in the first 48 hours | Methadone, dexketoprofen, acetaminophen |
| Urban et al, 200822 | IV bolus of ketamine followed by a continuous infusion for 24h (n=12) vs placebo (n=12) | Favours ketamine group during the first postoperative day, at rest and with physical therapy | NS | Hydromorphone PCA |
| ***Postoperative*** | | | | |
| *Epidural anaesthesia with local anesthetics* | | | | |
| Park SY et al, 201630 | Ropivacaine PCEA (n=45) vs PCIA (n=41) | Favours ropivacaine PCEA in the 3 first postoperative days | Favours ropivacaine PCEA group | Acetaminophen, oxycontin and demerol |
| Gessler F et al, 201631 | PCEA (n=13) vs PCIA (n=16) | Favours PCEA in the first 48 hours | N/A | Metamizole |
| Prasartritha T et al, 201032 | Morphine PCEA (n=40) vs bupivacaine PCEA (n=40) vs morphine PCIA (n=40) | Favours morphine and bupivacaine PCEA groups | NS | Nalbuphine |
| Choi S et al, 201436 | Hydromorpone bolus + epidural continuous infusion of bupivacaine with hydromorphone (n=20) vs placebo (n=18) | NS | NS | Hydromorphone PCIA, acetaminophen, gabapentin |
| *Epidural anaesthesia with local anaesthetics and opioids* | | | | |
| Wenk M et al, 201835 | Bupicacaine + sufentanil continuous thoracic epidural infusion started intraoperatively (n=17) vs postoperative Bupivacaine + Sufenta bolus followed by a continuous infusion (n=17) | Favours intraoperative group in the first hour | Favours intraoperative group | Piritramide |
| Pham Dang C et al, 200834 | Epidural bupivacaine + morphine (n=9) vs Ropivacaine + morphine (n=9) | NS | NS | Oral acetaminophen and morphine, epidural morphine |
| Kluba T et al, 201033 | Epidural ropivacaine and sufentanil (n=29) vs IV piritramide PCA (n=23) | NS | Favours epidural group | Metamizole, diclofenac, IV sufentanil |

Abbreviations: NS : non significative, N/A : non applicable, NSAIDs : non-steroidal anti-inflammatory drugs , PCA : patient controlled analgesia, IV : intravenous, PACU : post anaesthesia care unit, TLIP : thoraco-lumbar interfascial plane, PCEA : patient controlled epidural analgesia, PCIA : patient controlled intravenous analgesia