Kliiniline küsimus nr 11

Kas patsiendile valuvaigistite regulaarne skeemijärgne manustamine vs vajadusel manustamine mõjutab postoperatiivse ägeda valu ravi tulemust? (Does regular administration of pain killers vs administration of pain killers PRN (if needed) affect the outcome of postoperative acute pain treatment)

Kriitilised tulemusnäitajad:
valu tugevus, valu vähenemine, lisavaluvaigisti vajadus, aeg esimese lisavaluvaigisti vajaduseni,opiaadi vajadus, aeg valuvaigistava toime saabumiseni, postoperatiivsete tüsistuste esinemissagedus, rehospitaliseerimine valu tõttu, patsiendi (eestkostja) rahulolu valuraviga, haiglaravi kestus

Süstemaatilised ülevaated

Kokkuvõte süstemaatilistest ülevaadetest:
Kliinilise küsimuse vastusesse on hõlmatud 7 süstemaatilist ülevaadet ja 2 meta-analüüsi randomiseeritud uuringute kohta.
Kõik ülevaadetes käsitletud uuringud olid korrektselt läbi viidud randomiseeritud topeltpimedad platseebo- kontrollitud katsed, mis hõlmasid endas hambaravi, ortopeedilisi, günekoloogilisi ja kirurgilisi protseduure.
Ükski uuring ei ole otseselt käsitlenud regulaarset vs ebaregulaarset valuvaigistite manustamist, kuid kõik ülevaated kinnitasid, et vajadus nn rescue medication'i (lisavaluvaigisti) järele tekkis sagedamini juhtudel, kui primaarselt manustatud valuvaigistite doosid olid väiksemad ja ravimeid manustati suuremate ajaintervallidega. See omakorda aga viitab sellele, et kui valuvaigistid oli manustatud enne uue valustiimuli teket (s.t regulaarselt), toimisid nad efektiivsemalt ja ei tekkinud vajadust lisavaluvaigisti manustamiseks. *Samuti dokumenteeriti uuritavatel valu vähenemist vähemalt esimese 6 postoperatiivse tunni jooksul vähemalt 50% võrra maksimumist statistiliselt ja kliiniliselt olulistes väärtustes valuvaigisti gruppides võrreldes platseebo gruppidega. Suuremate valuvaigisti dooside ja sagedasema manustamisega kaasnes kõrvaltoimete/postoperatiivsete tüsistuste esinemissageduse tõus, mis valdavalt ei olnud aga statistiliselt oluline.*
Kõigis süsteemseid ülevaateid puudutavates uuringutes anti esimene doos valuvaigistit postoperatiivselt niipea, kui tekkis valu ja mida suurem doos valuvaigistit anti, seda efektiivsemalt ning pikaajalisemalt see toimis. Samuti toimisid enamusel juhtudest paremini ravimkombinatsioonid võrreldes monoteraapiaga.
Meta- analüüsidest nähtub, et skeemijärgselt süsteemselt manustatud magneesium ning preoperatiivselt tehtud TAP- blokk toimisid efektiivselt postoperatiivse valu vähendamises, need langetasid lisavaluvaigisti vajadust ning manustatavate opiaatide doose.
Uuringutes ei puudutatud haiglaravi kestvust, rehospitaliseerimise sagedust ja patsiendi rahulolu, kuid kõike eelnevat silmas pidades võib arvata, et paremini ja süsteemsemalt reguleeritud postoperatiivne valuravi vähendas haiglasviibimise aega, rehospitaliseerimise sagedust ja suurendas patsientide ja nende eestkostjate rahulolu valuraviga.

Viited

Kokkuvõtte (abstract või kokkuvõtlikum info)	Viide kirjandusallikale
Randomised, double-blind clinical trials of single dose, oral ibuprofen	**Single dose oral ibuprofen plus**

plus paracetamol compared with placebo or the same dose of ibuprofen alone for acute postoperative pain in adults (after having wisdom teeth removed). **Data collection and analysis** Two review authors independently considered trials for inclusion in the review, assessed quality, and extracted data. **Main results** Searches identified three studies involving **1647 participants**. Each of them examined several dose combinations. Included studies provided data from **508 participants for the comparison of ibuprofen 200 mg + paracetamol 500 mg with placebo, 543 participants for the comparison of ibuprofen 400 mg + paracetamol 1000 mg with placebo, and 359 participants for the comparison of ibuprofen 400 mg + paracetamol 1000 mg with ibuprofen 400 mg alone**. The proportion of participants achieving at least 50%maximum pain relief over 6 hours was 69%with ibuprofen 200mg + paracetamol 500 mg, 73% with ibuprofen 400 mg + paracetamol 1000 mg, and 7% with placebo, giving NNTs of 1.6 (1.5 to 1.8) and 1.5 (1.4 to 1.7) for the lower and higher doses respectively compared with placebo. For ibuprofen 400 mg alone the proportion was 52%, giving an NNT for ibuprofen 400 mg + paracetamol 1000 mg compared with ibuprofen alone of 5.4 (3.5 to 12). Ibuprofen + paracetamol at the 200/500 mg and 400/1000 mg doses resulted in longer times to remedication than placebo. The median time to use of rescue medication was 7.6 hours for ibuprofen 200 mg + paracetamol 500 mg, 8.3 hours with ibuprofen 400 mg + paracetamol 1000 mg, and 1.7 hours with placebo. Fewer participants needed rescue medication with ibuprofen + paracetamolcombination than with placebo or ibuprofen alone. The proportion was 34%with ibuprofen 200 mg + paracetamol 500 mg, 25% with ibuprofen 400 mg + paracetamol 1000 mg, and 79% with placebo, giving NNTs to prevent use of rescue medication of 2.2 (1.8 to 2.9) and 1.8 (1.6 to 2.2) respectively compared with placebo. The proportion of participants using rescue medication with ibuprofen 400 mg was 48%, giving an NNT to prevent use for ibuprofen 400 mg + paracetamol 1000 mg compared with ibuprofen alone of 4.3 (3.0 to 7.7). The proportion of participants experiencing one or more adverse events was 30% with ibuprofen 200 mg + paracetamol 500 mg, 29% with ibuprofen 400 mg + paracetamol 1000 mg, and 48% with placebo, giving NNT values in favour of the combination treatment of 5.4 (3.6 to 10.5) and 5.1 (3.5 to 9.5) for the lower and higher doses respectively. No serious adverse events were reported in any of the included studies. Withdrawals for reasons other than lack of efficacy were fewer than 5% and balanced across treatment arms. **Authors' conclusions** **Ibuprofen plus paracetamol combinations provided better analgesia than either drug alone (at the same dose), with a smaller chance of needing additional analgesia over about eight hours, and with a smaller chance of experiencing an adverse event.**	**paracetamol (acetaminophen) for acute postoperative pain** Cochrane Database of Systematic Reviews 2013, Issue 6. Art. No.: CD010210. DOI:10.1002/14651858.CD010210.pub2.
Randomised, double-blind, placebo- or active-controlled clinical trials of single dose oral ibuprofen plus codeine for acute postoperative pain in adults. **Data collection and analysis** Two review authors independently considered trials for inclusion in the review, assessed quality, and extracted data. effects. **Main results** Information was available from six studies with **1342 participants**, with a variety of doses of ibuprofen and codeine. **In four studies (443 participants) using ibuprofen 400 mg plus codeine 25.6 to 60 mg (high dose codeine)** 64% of participants had at least 50% maximum pain relief with the combination compared to 18% with placebo. The NNT was 2.2 (95% CI 1.8 to 2.6). **In three studies (204 participants) ibuprofen plus codeine (any dose)** was better than the same dose of ibuprofen (69% versus 55%) but the result was barely significant with a relative benefit of 1.3 (95% CI 1.01 to 1.6). **In two studies (159 participants) ibuprofen plus codeine** appeared to be better than the	**Single dose oral ibuprofen plus codeine for acute postoperative pain in adults** Cochrane Database of Systematic Reviews 2013, Issue 3. Art. No.: CD010107. DOI: 10.1002/14651858.CD010107.pub2.

same dose of codeine alone (69% versus 33%), but no analysis was done. There was no difference between the combination and placebo in the reporting of adverse events in these acute studies. **Authors' conclusions** **The combination of ibuprofen 400 mg plus codeine 25.6 to 60 mg demonstrates good analgesic efficacy. Very limited data suggest that the combination is better than the same dose of either drug alone. Use of combination analgesics that contain codeine has been a source of some concern because of misuse from over-the-counter preparations.**	
Diflunisal is a long-acting non-steroidal anti-inflammatory drug (NSAID) most commonly used to treat acute postoperative pain or chronic joint pain from osteoarthritis and rheumatoid arthritis. This review analyses the effectiveness and harm of different doses of diflunisal in the context of moderate to severe postoperative pain. **Selection criteria** Randomised, double blind, placebo-controlled trials of single dose orally administered diflunisal in adults with moderate to severe acute postoperative pain. **Data collection and analysis** Two review authors independently assessed trial quality and extracted data. Pain relief or pain intensity data were extracted and converted into the dichotomous outcome of number of participants with at least 50% pain relief over 4 to 6 hours, from which relative risk and number-needed-to-treat-to-benefit (NNT) were calculated. Numbers of participants using rescue medication over specified time periods, and time to use of rescue medication, were sought as additional measures of efficacy. Information on adverse events and withdrawals were collected. **Main results** **Nine studies in dental, orthopedic and gynaecological surgery** met the inclusion criteria, testing doses of diflunisal from 125 mg to 1000 mg. **For diflunisal 1000 mg**, the NNT for at least 50% pain relief over 4 to 6 hours was 2.1 (1.8 to 2.6) **(6 studies, 391 participants)**; the NNT to prevent remedication within 6 hours was 1.9 (1.7 to 2.3), and within 12 hours was 2.2 (1.9 to 2.7) **(6 studies, 409 participants)**. More participants experienced adverse events with diflunisal 100 mg than with placebo, but none were serious or led to withdrawal. **For diflunisal 500 mg,** the NNT for at least 50% pain relief over 4 to 6 hours was 2.6 (2.1 to 3.3) **(6 studies, 357 participants)**; the NNT to prevent remedication within 6 hours was 2.6 (2.1 to 3.4) **(6 studies, 390 participants)**, and within 12 hours was 2.9 (2.3 to 4.0) **(5 studies, 329 participants).** Adverse events did not differ significantly from placebo. **Authors' conclusions** **Diflunisal has an analgesic effect similar to other NSAIDs in single dose, but benefits from providing significant analgesia for about twelve hours. This property may be useful when regular dosing is needed, or when taking several doses of a shorter acting analgesic is impractical.**	**Single dose oral diflunisal for acute postoperative pain in adults** Cochrane Database of Systematic Reviews 2010, Issue 4. Art. No.: CD007440. DOI: 10.1002/14651858.CD007440.pub2.
Single oral dose, randomised, double-blind, placebo-controlled trials of aspirin for relief of established moderate to severe postoperative pain in adults. **Data collection and analysis** We assessed studies for methodological quality and two review authors extracted the data independently. We used summed total pain relief (TOTPAR) over four to six hours to calculate the number of participants achieving at least 50% pain relief.We used these derived results to calculate, with 95%confidence intervals, the relative benefit compared to placebo, and the number needed to treat (NNT) for one participant to experience at least 50%pain relief over four to six hours.We sought numbers of participants using rescue medication over specified time periods, and time to use of rescue medication, as additional measures of efficacy. We collected information on adverse events and withdrawals. **Main results** We included **68 studies** in which aspirin was used at doses from **300 mg to 1200 mg**, but the vast majority of participants received either **600/650 mg (2409 participants, 64 studies) or 990/1000 mg (380 participants,**	**Single dose oral aspirin for acute postoperative pain in adults** Cochrane Database of Systematic Reviews 2012, Issue 4. Art. No.: CD002067. DOI: 10.1002/14651858.CD002067.pub2.

eight studies). There was only one new study. Studies were overwhelmingly of adequate or good methodological quality. NNTs for at least 50% pain relief over four to six hours were 4.2 (3.9 to 4.8), 3.8 (3.0 to 5.1), and 2.7 (2.0 to 3.8) for 600/650 mg, 900/1000 mg, and 1200 mg respectively, compared with placebo. Type of pain model had no significant impact on the results. Lower doses were not significantly different from placebo. These results do not differ from those of the earlier review. Fewer participants required rescue medication with aspirin than with placebo over four to eight hours postdose, but by 12 hours there was no difference. **The number of participants experiencing adverse events was not significantly different from placebo for 600/650 mg aspirin, but for 900/1000 mg the number needed to treat to harm was 7.5 (4.8 to 17). The most commonly reported events were dizziness, drowsiness, gastric irritation, nausea, and vomiting, nearly all of which were of mild to moderate severity.** **Authors' conclusions** **Aspirin is an effective analgesic for acute pain of moderate to severe intensity. High doses are more effective, but are associated with increased adverse events, including drowsiness and gastric irritation. The pain relief achieved with aspirin was very similar milligram for milligram to that seen with paracetamol. There was no change to the conclusions in this update.**	
Parecoxib was the first COX-2 available for parenteral administration, and may, given intravenously or intramuscularly, offer advantages over oral medication when patients have nausea and vomiting or are unable to swallow, such as in the immediate postoperative period. **Selection criteria** Randomised, double-blind, placebo-controlled clinical trials of parecoxib compared with placebo for relief of acute postoperative pain in adults. **Data collection and analysis** Two review authors independently assessed trial quality and extracted data. The area under the "pain relief versus time" curve was used to derive the proportion of participants with parecoxib and placebo experiencing at least 50% pain relief over 6 hours, using validated equations. The number-needed-to-treat-to-benefit (NNT) was calculated using 95% confidence intervals (CI). The proportion of participants using rescue analgesia over a specified time period, and time to use of rescue analgesia, were sought as additional measures of efficacy. Information on adverse events and withdrawals were also collected. **Main results** **Seven studies (1446 participants) were included**. There was no significant difference between doses, or between intravenous and intramuscular administration for 50% pain relief over 6 hours: NNTs compared with placebo were 3.1 (2.4 to 4.5), 2.4 (2.1 to 2.8), and 1.8 (1.5 to 2.3) for 10, 20, and 40 mg parecoxib respectively. Fewer participants required rescue medication over 24 hours with parecoxib than placebo: parecoxib 40 mg was significantly better than parecoxib 20 mg (NNTs to prevent use of rescue medication 7.5 (5.3 to 12.8) and 3.3 (2.6 to 4.5) respectively; $P < 0.0007$). Median time to use of rescue medication was 3.1 hours, 6.9 hours and 10.6 hours with parecoxib 10 mg, 20 mg and 40 mg respectively, and 1.5 hours with placebo. Adverse events were generally mild to moderate, rarely led to withdrawal, and did not differ in frequency between groups. No serious adverse events were reported with parecoxib or placebo. **Authors' conclusions** **A single dose of parecoxib 20 mg or 40 mg provided effective analgesia for 50 to 60% of those treated compared to about 15% with placebo, and was well tolerated. Duration of analgesia was longer, and significantly fewer participants required rescue medication over 24 hours with the higher dose**.	**Intravenous or intramuscular parecoxib for acute postoperative pain in adults** Cochrane Database of Systematic Reviews 2009, Issue 2. Art. No.: CD004771. DOI: 10.1002/14651858.CD004771.pub4.
Naproxen, a non-steroidal anti-inflammatory drug, is used to treat various painful conditions including postoperative pain, and is often administered as the sodium salt to improve its solubility. This review updates a 2004 Cochrane review showing that naproxen sodium 550 mg (equivalent to naproxen 500 mg) was effective for treating postoperative	**Single dose oral naproxen and naproxen sodium for acute postoperative pain in adults** Cochrane Database of Systematic

pain. New studies have since been published. **Selection criteria** Randomised, double blind, placebo-controlled trials of single dose orally administered naproxen or naproxen sodium in adults with moderate to severe acute postoperative pain. **Data collection and analysis** Two review authors independently assessed trial quality and extracted data. Pain relief or pain intensity data were extracted and converted into the dichotomous outcome of number of participants with at least 50% pain relief over four to six hours, from which relative risk and number-needed-to-treat-to-benefit (NNT) were calculated. Numbers of participants using rescue medication over specified time periods, and time to use of rescue medication, were sought as additional measures of efficacy. Information on adverse events and withdrawals were collected. **Main results** The original review included **10 studies with 996 participants**. This updated review included **15 studies (1509 participants)**; **11 assessed naproxen sodium and four naproxen**. In nine studies (784 participants) using 500/550 mg naproxen or naproxen sodium the NNT for at least 50% pain relief over four to six hours was 2.7 (95% CI 2.3 to 3.2). No dose response was demonstrated over the range 200/220 mg to 500/550 mg, but limited data was identified. Median time to use of rescue medication was 8.9 hours for naproxen 500/550 mg and 2.0 hours for placebo. Use of rescue medication was significantly less common with naproxen than placebo. Associated adverse events were generally of mild to moderate severity and rarely led to withdrawal. **Authors' conclusions** **Doses equivalent to 500 mg and 400 mg naproxen administered orally provided effective analgesia to adults with moderate to severe acute postoperative pain. About half of participants treated with these doses experienced clinically useful levels of pain relief, compared** **to 15% with placebo, and half required additional medication within nine hours, compared to two hours with placebo. Associated adverse events did not differ from placebo.**	Reviews 2009, Issue 1. Art. No.: CD004234. DOI: 10.1002/14651858.CD004234.pub3. Copyright
Combining two different analgesics in fixed doses in a single tablet can provide better pain relief than either drug alone in acute pain. This appears to be broadly true across a range of different drug combinations, in postoperative pain and migraine headache. Fixed dose combinations of ibuprofen and oxycodone are available, and the drugs may be separately used in combination in some acute pain situations. **Selection criteria** Randomised, double-blind clinical trials of single dose, oral ibuprofen plus oxycodone compared with placebo or the same dose of ibuprofen alone for acute postoperative pain in adults. **Data collection and analysis** Two review authors independently considered trials for inclusion in the review, assessed quality, and extracted data. We used the area under the pain relief versus time curve to derive the proportion of participants prescribed ibuprofen plus oxycodone, ibuprofen alone, oxycodone alone, or placebo with at least 50% pain relief over six hours, using validated equations. We calculated relative risk (RR) and number needed to treat to benefit (NNT).We used information on use of rescue medication to calculate the proportion of participants requiring rescue medication and the weighted mean of the median time to use. We also collected information on adverse events. **Main results** Searches identified **three studies involving 1202 participants**. All examined the same dose combination. Included studies provided data from **603 participants for the comparison of ibuprofen 400 mg + oxycodone 5 mg with placebo, 717 participants for the comparison of ibuprofen 400 mg + oxycodone 5 mg with ibuprofen 400 mg alone, and 471 participants for the comparison of ibuprofen 400 mg + oxycodone 5 mg with oxycodone 5 mg alone.** The proportion of participants achieving at least 50% pain relief over 6 hours was 60% with ibuprofen 400 mg + oxycodone 5 mg and 17% with	**Single dose oral ibuprofen plus oxycodone for acute postoperative pain in adults** Cochrane Database of Systematic Reviews 2013, Issue 6. Art. No.: CD010289. DOI: 10.1002/14651858.CD010289.pub2.

placebo, giving an NNT of 2.3 (2.0 to 2.8). For ibuprofen 400 mg alone the proportion was 50%, producing no significant difference between ibuprofen 400 mg + oxycodone 5 mg and ibuprofen 400 mg alone. For oxycodone 5 mg alone the proportion was 23%, giving an NNT for ibuprofen 400 mg + oxycodone 5 mg compared with oxycodone alone of 2.9 (2.3 to 4.0). Ibuprofen + oxycodone resulted in longer times to remedication than with placebo. The median time to use of rescue medication was more than 5 hours for ibuprofen 400 mg + oxycodone 5 mg, and 2.3 hours or less with placebo. Fewer participants needed rescue medication with ibuprofen + oxycodone combination than with placebo or ibuprofen alone. The proportion was 40% with ibuprofen 400 mg + oxycodone 5 mg, 83% with placebo, 53% with ibuprofen alone, and 83% with oxycodone alone, giving NNT to prevent one patient needing rescue medication of 2.4 (2.0 to 2.9), 11 (6.1 to 56), and 2.6 (2.1 to 3.4) for comparisons of ibuprofen 400 mg + oxycodone 5 mg with placebo, ibuprofen alone, and oxycodone alone, respectively. The proportion of participants experiencing one or more adverse events was 25% with ibuprofen 400 mg + oxycodone 5 mg, 25% with placebo, 26% with ibuprofen alone, and 35% with oxycodone alone; they were not significantly different. Serious adverse events were reported only after abdominal surgery 6/169 with the combination, 1/175 with ibuprofen alone, 3/52 with oxycodone alone, and 1/60 with placebo. Withdrawals for reasons other than lack of efficacy were fewer than 5% and balanced across treatment arms. **Authors' conclusions** **The combination of ibuprofen 400mg + oxycodone 5mg provided analgesia for longer than oxycodone alone, but not ibuprofen alone (at the same dose). There was also a smaller chance of needing additional analgesia over about eight hours, and with no greater chance of experiencing an adverse event.**	
Transversus abdominis plane (TAP) block has been used as a multimodal strategy to optimize postoperative pain outcomes; however, it remains unclear which type of surgical procedures can benefit from the administration of a TAP block. Several studies have examined the effect of the TAP block on postoperative pain outcomes after laparoscopic surgical procedures and generated conflicting results. Our main objective in the current investigation was to evaluate the effect of TAP block on postoperative analgesia outcomes for laparoscopic surgical procedures. **METHODS:** A search was performed to identify randomized controlled trials (2009-2013) that evaluated the effects of the TAP block compared with an inactive group (placebo or "no treatment") on postoperative pain outcomes in laparoscopic surgical procedures. Primary outcomes included early (0–4 hours) and late (24 hours) postoperative pain at rest and on movement and postoperative opioid consumption (up to 24 hours). Meta-analysis was performed using a random-effects model. Publication bias was evaluated by examining the presence of asymmetric funnel plots using Egger regression test. Meta- regression analysis was performed to establish an association between the local anesthetic dose and the evaluated outcomes. **RESULTS: Ten randomized clinical trials with 633 subjects** were included in the analysis. The weighted mean difference (99% confidence interval) of the combined effects **favored TAP block over control for pain at rest** (≤4 hours, −2.41 [−3.6 to −1.16]) and (at 24 hours, −1.33 [−2.19 to −0.48]) (0–10 numerical scale). **Postoperative opioid consumption was decreased in the TAP block group compared with control**, weighted mean difference (99% confidence interval) of −5.74 (−8.48 to −2.99) mg morphine IV equivalents. Publication bias was not present in any of the analysis. **Preoperative TAP block administration resulted in greater effects on early pain and opioid consumption compared with postoperative administration.** Meta-regression analysis revealed an association between local anesthetic dose and the TAP block effect on late pain at rest and postoperative opioid consumption. **None of the**	**Transversus Abdominis Plane Block to Ameliorate Postoperative Pain Outcomes After Laparoscopic Surgery: A Meta-Analysis of Randomized Controlled Trials** Gildasio S. De Oliveira Jr, MD, MSCI, Lucas Jorge Castro-Alves, MD, Autoun Nader, MD, Mark C. Kendall, MD, and Robert J. McCarthy, PharmD

studies reported symptoms of local anesthetic toxicity. CONCLUSIONS: TAP block is an effective strategy to improve early and late pain at rest and to reduce opioid consumption after laparoscopic surgical procedures. In contrast, the TAP block was not superior compared with control to reduce early and late pain during movement. Preoperative administration of a TAP block seems to result in greater effects on postoperative pain outcomes. We also detected a local anesthetic dose response on late pain and postoperative opioid consumption.	
Systemic magnesium has been used to minimize postoperative pain with conflicting results by clinical studies. It remains unknown whether the administration of perioperative systemic magnesium can minimize postoperative pain. The objective of the current investigation was to evaluate the effect of systemic magnesium on postoperative pain outcomes. **Methods:** A wide search was performed to identify randomized controlled trials that evaluated the effects of systemic magnesium on postoperative pain outcomes in surgical procedures performed under general anesthesia. Meta-analysis was performed using a random-effect model. Publication bias was evaluated by examining the presence of asymmetric funnel plots using Egger regression. **Results: Twenty randomized clinical trials with 1,257 subjects** were included. The weighted mean difference (99% CI) of the combined **effects favored magnesium over control for pain at rest** (≤ 4 h, −0.74 [−1.08 to −0.48]; 24 h, −0.36 [−0.63 to −0.09]) and with movement at 24 h, −0.73 (−1.37 to −0.1). **Opioid consumption was largely decreased in the systemic magnesium group compared with control,** weighted mean difference (99% CI) of −10.52 (−13.50 to −7.54) mg morphine IV equivalents. Publication bias was not present in any of the analysis. Significant heterogeneity was present in some analysis, but it could be partially explained by the sole intraoperative administration of magnesium compared with the intraoperative and postoperative administration. **None of the studies reported clinical toxicity related to toxic serum levels of magnesium.** **Conclusion: Systemic administration of perioperative magnesium reduces postoperative pain and opioid consumption. Magnesium administration should be considered as a strategy to mitigate postoperative pain in surgical patients.**	**Perioperative Systemic Magnesium to Minimize Postoperative Pain Meta-analysis of Randomized Controlled Trials** Gildasio S . De Oliveira, Jr., M.D., M.S.C.I.,* L ucas J. Castro-Alves, M.D.,† Jamil H . Khan, B.S.,‡ Robert J. McCarthy, Pharm.D.§ Anesthesiology 2010; 112:473–92 Copyright © 2010, the American Society of Anesthesiologists, Inc. Lippincott Williams & Wilkins

Ravijuhendid

Kokkuvõte ravijuhendites leiduvast:

AU-10 Acutepain AU (Austraalia ja Uus- Meremaa ägeda postoperatiivse valu ravijuhend):

Laboriuuringud on kinnitanud, et valuvaigistite manustamine enne ägeda valu stiimulit vähendab efektiivsemalt dorsaalsarve muutusi ning tsentraalset sensitisatsiooni võrreldes sellega, kui valuvaigisti manustatakse peale valu teket (Woolf, 1983).

Kuna tsentraalse sensitisatsiooni protsess ei ole seotud mitte ainult nahalõike, vaid kogu intraoperatiivse koekahjustuse ulatuse ja operatsioonijärgse põletikureaktsiooniga, siis valuravi kontseptsioon liigub ühekordselt interventsioonilt “protektiivse” või “preventiivse” analgeesia suunas (Kissin, 1994). Preventiivne analgeesia on siin kontekstis kõige sobilikum termin, sest tähendab valuravi efekti püsimist eeldatavast ajaperioodist kauem. Kliinilises praktikas tähendab preventiivne analgeesia trauma- või operatsioonijärgse kroonilise valu

väljakujunemise vältimist läbi tsentraalse sensitisatsiooni vähendamise. Kõigele eelnevale toetudes ilmneb, et preventiivse strateegia efektiivsus põhineb sellel, et aktiivne valuravi interventsioon jätkub regulaarselt senikaua, kuni püsib sensibiliseeriv stiimul (s.t. kogu postoperatiivse perioodi vältel)

Teistes ravijuhendites sellele küsimusele otsest vastust ei olnud.

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1	Pain, Postoperative/	19793
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