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Anaesthesia

Evidence Update

January 2018
(Quarterly)

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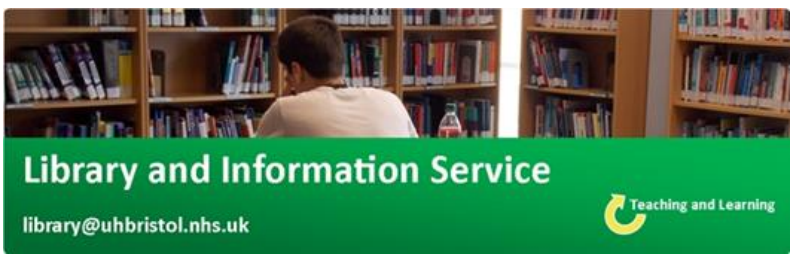

Lunchtime Drop-in Sessions

All sessions last one hour

January (13.00-14.00)

4th (Thu)	**Statistics**
8th (Mon)	**Literature Searching**
18th (Thu)	**Critical Appraisal**
24th (Wed)	**Statistics**

February (12.00-13.00)

1st (Thu)	**Literature Searching**
9th (Fri)	**Critical Appraisal**
12th (Mon)	**Statistics**
20th (Tue)	**Literature Searching**
28th (Wed)	**Critical Appraisal**

March (13.00-14.00)

8th (Thu)	**Statistics**
12th (Mon)	**Literature Searching**
20th (Tue)	**Critical Appraisal**
28th (wed)	**Statistics**

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Shortlist announced for the 2018 AAGBI Award for Innovation in Anaesthesia, Critical Care and Pain 10 January 2018

UpToDate®

OpenAthens login required. Register here: https://openathens.nice.org.uk/

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Literature review current through: Dec 2017. | **This topic last updated:** Jan 11, 2018.

Anesthesia for head and neck surgery

Literature review current through: Dec 2017. | **This topic last updated:** Jan 08, 2018.

Perioperative temperature management

Literature review current through: Dec 2017. | **This topic last updated:** Jan 06, 2018.

Anesthesia for endovascular aortic repair

Literature review current through: Dec 2017. | **This topic last updated:** Jan 08, 2018.

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Literature review current through: Dec 2017. | **This topic last updated:** Jan 02, 2018.

Anesthesia for the older adult

Literature review current through: Dec 2017. | **This topic last updated:** Jan 09, 2018.

Clinical use of neuromuscular blocking agents in anesthesia

Literature review current through: Dec 2017. | **This topic last updated:** Dec 19, 2017.

NICE National Institute for Health and Care Excellence

Cuffed versus uncuffed endotracheal tubes for general anaesthesia in children aged eight years and under

Source: Cochrane Database of Systematic Reviews - 17 November 2017

Effect of general anaesthesia on functional outcome in patients with anterior circulation ischaemic stroke having endovascular thrombectomy versus standard care: a meta-analysis of individual patient data 18 December 2017 - Publisher: The Lancet Neurology

Effect of General Anesthesia and Conscious Sedation During Endovascular Therapy on Infarct Growth and Clinical Outcomes in Acute Ischemic Stroke: A Randomized Clinical Trial 16 January 2018 - Publisher: JAMA Neurology

Cochrane Library

Cerebral near-infrared spectroscopy (NIRS) for perioperative monitoring of brain oxygenation in children and adults Online Publication Date: January 2018

Propofol for the promotion of sleep in adults in the intensive care unit Online Publication Date: January 2018

Cuffed versus uncuffed endotracheal tubes for general anaesthesia in children aged eight years and under Online Publication Date: November 2017

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News, Research, Conferences, Training etc
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Psoas Versus Femoral Blocks: A Registry Analysis of Risks and Benefits.

Author(s): Bomberg, Hagen; Huth, Andrea; Wagenpfeil, Stefan; Kessler, Paul; Wulf, Hinnerk;

Source: Regional anesthesia and pain medicine; ; vol. 42 (no. 6); p. 719-724

Publication Type(s): Journal Article

Abstract:BACKGROUND AND OBJECTIVESPsoas blocks are an alternative to femoral nerve blocks and have the potential advantage of blocking the entire lumbar plexus. However, the psoas muscle is located deeply, making psoas blocks more difficult than femoral blocks. In contrast, while femoral blocks are generally easy to perform, the inguinal region is prone to infection. We thus tested the hypothesis that psoas blocks are associated with more insertion-related complications than femoral blocks but have fewer catheter-related infections.METHODSWe extracted 22,434 surgical cases from the German Network for Regional Anesthesia registry (2007-2014) and grouped cases as psoas (n = 7593) and femoral (n = 14,841) blocks. Insertion-related complications (including single-shot blocks and catheter) and infectious complications (including only catheter) in each group were compared with χ tests. The groups were compared with multivariable logistic models, adjusted for potential confounding factors.RESULTSAfter adjustment for potential confounding factors, psoas blocks were associated with more complications than femoral blocks including vascular puncture 6.3% versus 1.1%, with an adjusted odds ratio (aOR) of 3.6 (95% confidence interval [CI], 2.9-4.6; P < 0.001), and multiple skin punctures 12.6% versus 7.7%, with an aOR of 2.6 (95% CI, 2.1-3.3; P <0.001). Psoas blocks were also associated with fewer catheter-related infections: 0.3% versus 0.9% (aOR of 0.4; 95% CI, 0.2-0.8; P = 0.016), and with improved patient satisfaction (mean ± SD 0- to 10-point scale score, 9.6 ± 1.2 vs 8.4 ± 2.9; P < 0.001). Results from a propensity-matched sensitivity analysis were similar.CONCLUSIONSPsoas blocks are associated with more insertion-related complications but fewer infectious complications.CLINICAL TRIAL REGISTRATIONID NCT02846610.

Effect of magnesium added to local anesthetics for caudal anesthesia on postoperative pain in pediatric surgical patients: A systematic review and meta-analysis with Trial Sequential Analysis.

Author(s): Kawakami, Hiromasa; Mihara, Takahiro; Nakamura, Nobuhito; Ka, Koui; Goto, Takahisa

Source: PloS one; 2018; vol. 13 (no. 1); p. e0190354

Publication Type(s): Journal Article

Available at PloS one - from EBSCO (MEDLINE Complete)

Abstract:BACKGROUNDMagnesium has been investigated as an adjuvant for neuraxial anesthesia, but the effect of caudal magnesium on postoperative pain is inconsistent. The aim of this systematic review and meta-analysis was to evaluate the analgesic effect of caudal magnesium.METHODSWe searched six databases, including trial registration sites. Randomized clinical trials reporting the effect of caudal magnesium on postoperative pain after general anesthesia were eligible. The risk ratio for use of rescue analgesics after surgery was combined using a random-effects model. We also assessed adverse events. The I2 statistic was used to assess heterogeneity. We assessed risk of bias with Cochrane domains. We controlled type I and II errors due to sparse data and repetitive testing with Trial Sequential Analysis. We assessed the quality of evidence with GRADE.RESULTSFour randomized controlled trials (247 patients) evaluated the need for rescue analgesics. In all four trials, 50 mg of magnesium was administered with caudal ropivacaine. The results suggested that the need for rescue analgesia was reduced significantly by caudal magnesium administration (risk ratio 0.45;

95% confidence interval 0.24-0.86). There was considerable heterogeneity as indicated by an I2 value of 62.5%. The Trial Sequential Analysis-adjusted confidence interval was 0.04-5.55, indicating that further trials are required. The quality of evidence was very low. The rate of adverse events was comparable between treatment groups.CONCLUSIONCaudal magnesium may reduce the need for rescue analgesia after surgery, but further randomized clinical trials with a low risk of bias and a low risk of random errors are necessary to assess the effect of caudal magnesium on postoperative pain and adverse events.TRIAL REGISTRATIONUniversity Hospital Medical Information Network Clinical Trials Registry UMIN000025344.

Comparison of ultrasound-guided posterior transversus abdominis plane block and lateral transversus abdominis plane block for postoperative pain management in patients undergoing cesarean section: a randomized double-blind clinical trial study.

Author(s): Faiz, Seyed Hamid Reza; Alebouyeh, Mahmoud Reza; Derakhshan, Pooya; Imani, Farnad

Source: Journal of pain research; 2018; vol. 11 ; p. 5-9

Publication Type(s): Journal Article

Available at Journal of pain research - from Europe PubMed Central - Open Access

Abstract: BackgroundDue to the importance of pain control after abdominal surgery, several methods such as transversus abdominis plane (TAP) block are used to reduce the pain after surgery. TAP blocks can be performed using various ultrasound-guided approaches. Two important approaches to do this are ultrasound-guided lateral and posterior approaches. This study aimed to compare the two approaches of ultrasound-guided lateral and posterior TAP blocks to control pain after cesarean section.Materials and methodsIn this double-blind clinical trial study, 76 patients scheduled for elective cesarean section were selected and randomly divided into two groups of 38 and underwent spinal anesthesia. For pain management after the surgery, one group underwent lateral TAP block and the other group underwent posterior TAP block using 20cc of ropivacaine 0.2% on both sides. Pain intensity was evaluated based on Numerical Analog Scale (NAS) at rest and when coughing, 2, 4, 6, 12, 24 and 36 hours after surgery.ResultsThe pain at rest in the posterior group at all hours post surgery was lower than the lateral group, especially at 6, 12 and 24 hours after the surgery and the difference was statistically significant ($p=0.03$, $p<0.004$, $p=0.001$).ConclusionThe results of this study show that ultrasound-guided posterior TAP block compared with the lateral TAP block was more effective in pain control after cesarean section.

Patient-controlled fascia iliaca compartment block versus fentanyl patient-controlled intravenous analgesia in patients undergoing femur fracture surgery

Author(s): Mostafa S.F.; Eid G.M.; Elkalla R.S.

Source: Egyptian Journal of Anaesthesia; 2018

Publication Type(s): Article In Press

Abstract: Background and objectives: Postoperative pain relief is crucial in elderly, however, the use of opioids is limited owing to their potential side effects. We studied the effects of patient-controlled ultrasound guided fascia iliaca compartment block (FICB) with Levobupivacaine versus patient-controlled intravenous fentanyl on postoperative pain score in patients scheduled for fixation of femur fractures under general anesthesia. Methods: 60 patients ASA physical status I and II undergoing elective fixation of fracture femur were enrolled in this randomized study into two groups. Patient-controlled IV fentanyl group (PC-IVF): patients received fentanyl 20 mug/ml solutions through a PCA pump programmed to give a basal infusion of 10 mu/h and bolus doses of 2 ml/dose with a 15 min lockout interval. Patient-controlled fascia iliaca compartment analgesia (PC-FICA): PCA was adjusted to deliver a continuous basal infusion of 4 ml/h levobupivacaine 0.125% and 2 ml demand boluses with a lockout interval of 15 min. Visual analogue score (VAS) and total

postoperative rescue analgesic consumption were assessed. Results: VAS scores were significantly lower in PC-FICA group compared to PC-IVF group at 1 h, 3 h and 6 h postoperative. 7 patients requested post-operative rescue analgesia in PC-FICA group compared to 19 patients in PC-IVF group. Total consumption of rescue analgesia was significantly decreased in PC-FICA group (31.4 +/- 10.7 mg) compared to PC-IVF group (70.5 +/- 20.4 mg) (P < .05). Conclusion: PC-FICA provided a better quality of analgesia and decreased postoperative rescue analgesic requirement without increased side effects compared to PCA IV fentanyl.Pan African Clinical Trial Registry: PACTR201512001367158

Changes in the first postoperative night bispectral index of patients after thyroidectomy with different types of primary anesthetic management: a randomized controlled trial.

Author(s): Tan, Wen-Fei; Wang, Zhi-Lin; Ma, Hong; Jin, Feng; Lu, Huang-Wei

Source: Journal of clinical monitoring and computing; Feb 2018; vol. 32 (no. 1); p. 165-172

Publication Type(s): Journal Article

Abstract: Despite major advances in anesthesia management and developments in anesthetic agents, postoperative sleep disturbances remain dissatisfactory for many patients. We hypothesized that propofol might have a subtle influence on sleep after thyroidectomy compared to sevoflurane. A randomized, single-blinded, controlled trial was conducted at the First Hospital of China Medical University from October 2014 to October 2015. One hundred and twenty-four patients undergoing thyroidectomy were enrolled and received sevoflurane (sevoflurane group) or propofol (propofol group) as anesthesia maintenance. Major assessments were made during the operation (different types of anesthetic management) and on the first postoperative night (sleep status). The primary outcome was postoperative sleep status, measured by the BIS-Vista monitor on the first night after surgery between propofol and sevoflurane groups. A total of 105 patients (79 women, 26 men; mean age 49 years; range 18-65 years) were included in the final study sample. All patients in both groups showed one of the five sleep patterns classified by this trial. The BIS-area under the curve was decreased, the sleep efficiency index was significantly increased, and the durations of postoperative sleep and sleep stage N3 were increased by 110.5 and 36.5 min per patient, respectively, in the propofol compared to the sevoflurane group. Propofol might preserve sleep time immediately after thyroidectomy. Clinical Trials.gov identifier: NCT 02146976.

Human factors in preventing complications in anaesthesia: a systematic review.

Author(s): Jones, C. P. L.; Fawker-Corbett, J.; Groom, P.; Morton, B.; Lister, C.; Mercer, S. J.

Source: Anaesthesia; Jan 2018; vol. 73 ; p. 12-24

Publication Type(s): Academic Journal

Abstract: Human factors in anaesthesia were first highlighted by the publication of the Anaesthetists Non-Technical Skills Framework, and since then an awareness of their importance has gradually resulted in changes in routine clinical practice. This review examines recent literature around human factors in anaesthesia, and highlights recent national reports and guidelines with a focus on team working, communication, situation awareness and human error. We highlight the importance of human factors in modern anaesthetic practice, using the example of complex trauma.

Adherence to guidance on registration of randomised controlled trials published in Anaesthesia.

Author(s): El-Boghdadly, K; Wiles, M D; Atton, S; Bailey, C R

Source: Anaesthesia; Jan 2018; vol. 73 (no. 1)

Publication Type(s): Academic Journal

Abstract: The International Committee of Medical Journal Editors recommends the prospective registration of interventional clinical trials. We aimed to assess the compliance with these guidelines for manuscripts submitted to and published by a single anaesthetic journal. We examined the rates of prospective trial registration, the incidence of discrepancies in primary outcome measure(s) and sample sizes, and the citation metrics of all randomised controlled trials published in Anaesthesia over a 3-year period (2014-2016). Of the 422 randomised controlled trials submitted during the study period, 115 (27.3%) were accepted for publication, of which 90 (78.3%) were patient studies, with the remaining 25 comprising manikin, simulation, volunteer, bench, cadaver and other non-patient intervention studies. Of the accepted patient studies, 64 (71.1%) were prospectively registered with a clinical trials registry, 20 (22.2%) were not registered and 6 (6.7%) were retrospectively registered after manuscript submission. There was no difference in the frequency of registration between accepted and rejected manuscripts (77.8% vs. 84.5%, respectively, p = 0.143). The median (IQR [range]) time from registration of accepted manuscripts to journal submission was 701 (331-1341 [99-2436]) days. There was no correlation between number of patients recruited to a study and time to submission. Fifty-two (81.3%) of the prospectively registered studies reported the same primary outcomes in both registration and submission, and 34 (53.1%) studies were published with the same powered sample size as that described in the registry. Eleven (12.2%) studies recruited more patients and 19 (21.1%) recruited fewer patients than described in the registration protocol. There was no difference in the median (IQR [range]) number of citations per month since publication between prospectively (0.27 (0.15-0.46 [0.00-1.59]), and retrospectively (0.39 (0.15-0.62 [0.10-0.67]); p = 0.502) or unregistered (0.33 (0.10-0.52 [0.00-0.67]); p = 0.867) studies. Our results suggest that prospective clinical trial registration has no influence on acceptance for publication by Anaesthesia or subsequent citation metrics. The international recommendation for prospective trial registration appears to have not been universally incorporated into anaesthetic-related research practice.

Can Dexmedetomidine Influence Recovery Profiles from General Anesthesia in Nasal Surgery?

Author(s): Lee, Ho Seok; Yoon, Ho Young; Jin, Ho Jun; Hwang, Se Hwan

Source: Otolaryngology-Head & Neck Surgery; Jan 2018; vol. 158 (no. 1); p. 43-53

Publication Type(s): Academic Journal

Abstract: Objectives Dexmedetomidine has sympatholytic, sedative, anesthetic, and analgesic effects, as well as vasoconstrictive effects, which may help prevent hypotension under general anesthesia. This meta-analysis aimed to perform a systematic review of the literature and investigate the effect of dexmedetomidine on perioperative morbidity following nasal surgery and its adverse effects. Data Sources MEDLINE, SCOPUS, and the Cochrane database. Review Methods Two authors independently searched the databases from their inception to March 2017. Studies were selected that compared perioperative dexmedetomidine administration (dexmedetomidine groups) with a placebo or remifentanil (control groups) with regard to intraoperative morbidity, including surgical time, bleeding amount, hypotension, and bradycardia during operation, and postoperative morbidity, such as emergence agitation, nausea and vomiting, and sedation after operation. Results Surgical time, intraoperative blood loss, dose of inhaled anesthetic gas, dose of fentanyl, postoperative pain, and incidence of emergence agitation were significantly lower in the dexmedetomidine group versus the placebo group. In contrast, there were no significant differences in intraoperative hemodynamic stability and postoperative residual sedation and nausea and vomiting between groups. Additionally, compared with remifentanil (a currently widely used agent), dexmedetomidine was superior in view of postoperative pain and intraoperative blood pressure control. Conclusion This meta-analysis shows that the systemic administration of dexmedetomidine can decrease surgical time, intraoperative blood loss, and doses of intraoperative inhaled anesthetic

gas and fentanyl as compared with placebo. It can also decrease postoperative pain and incidence of the emergence agitation. Due to the small number of studies, further clinical trials are needed to confirm these results.

Effect of general anaesthesia on functional outcome in patients with anterior circulation ischaemic stroke having endovascular thrombectomy versus standard care: a meta-analysis of individual patient data.

Author(s): Campbell, Bruce C V; van Zwam, Wim H; Goyal, Mayank; Menon, Bijoy K;

Source: The Lancet. Neurology; Jan 2018; vol. 17 (no. 1); p. 47-53

Publication Type(s): Meta-analysis Journal Article

Abstract:BACKGROUNDGeneral anaesthesia (GA) during endovascular thrombectomy has been associated with worse patient outcomes in observational studies compared with patients treated without GA. We assessed functional outcome in ischaemic stroke patients with large vessel anterior circulation occlusion undergoing endovascular thrombectomy under GA, versus thrombectomy not under GA (with or without sedation) versus standard care (ie, no thrombectomy), stratified by the use of GA versus standard care.METHODSFor this meta-analysis, patient-level data were pooled from all patients included in randomised trials in PuMed published between Jan 1, 2010, and May 31, 2017, that compared endovascular thrombectomy predominantly done with stent retrievers with standard care in anterior circulation ischaemic stroke patients (HERMES Collaboration). The primary outcome was functional outcome assessed by ordinal analysis of the modified Rankin scale (mRS) at 90 days in the GA and non-GA subgroups of patients treated with endovascular therapy versus those patients treated with standard care, adjusted for baseline prognostic variables. To account for between-trial variance we used mixed-effects modelling with a random effect for trials incorporated in all models. Bias was assessed using the Cochrane method. The meta-analysis was prospectively designed, but not registered.FINDINGSSeven trials were identified by our search; of 1764 patients included in these trials, 871 were allocated to endovascular thrombectomy and 893 were assigned standard care. After exclusion of 74 patients (72 did not undergo the procedure and two had missing data on anaesthetic strategy), 236 (30%) of 797 patients who had endovascular procedures were treated under GA. At baseline, patients receiving GA were younger and had a shorter delay between stroke onset and randomisation but they had similar pre-treatment clinical severity compared with patients who did not have GA. Endovascular thrombectomy improved functional outcome at 3 months both in patients who had GA (adjusted common odds ratio (cOR) 1·52, 95% CI 1·09-2·11, p=0·014) and in those who did not have GA (adjusted cOR 2·33, 95% CI 1·75-3·10, p<0·0001) versus standard care. However, outcomes were significantly better for patients who did not receive GA versus those who received GA (covariate-adjusted cOR 1·53, 95% CI 1·14-2·04, p=0·0044). The risk of bias and variability between studies was assessed to be low.INTERPRETATIONWorse outcomes after endovascular thrombectomy were associated with GA, after adjustment for baseline prognostic variables. These data support avoidance of GA whenever possible. The procedure did, however, remain effective versus standard care in patients treated under GA, indicating that treatment should not be withheld in those who require anaesthesia for medical reasons.FUNDINGMedtronic.

The PECS II block as a major analgesic component for clavicle operations: A description of 7 case reports.

Author(s): Schuitemaker R, J B; Sala-Blanch, X; Rodriguez-Pérez, C L; Mayoral R, J T

Source: Revista espanola de anestesiologia y reanimacion; Jan 2018; vol. 65 (no. 1); p. 53-58

Publication Type(s): Journal Article

Abstract: Clavicle fractures correspond to 35% of traumatic fractures of the shoulder girdle. Regional anaesthesia has shown better analgesic results than systemic treatment for perioperative management. Innervation of the clavicle is complex, at present its knowledge raises controversy. The lateral pectoral nerve through the innervating musculature predominantly participates in the lateral and anterior part of the clavicle. The following report of 7 cases describes the effective postoperative analgesia of modified PEC II block in patients with middle third clavicle fracture or acromioclavicular dislocation who underwent a modified PEC II block for postoperative pain management, in the context of a multimodal analgesia. The potential advantage of this management over other analgesic procedures should be evaluated in specific clinical trials.

Does the volume of supplemental intraligamentary injections affect the anaesthetic success rate after a failed primary inferior alveolar nerve block? A randomized-double blind clinical trial.

Author(s): Aggarwal, V; Singla, M; Miglani, S; Kohli, S; Sharma, V; Bhasin, S S

Source: International endodontic journal; Jan 2018; vol. 51 (no. 1); p. 5-11

Publication Type(s): Journal Article

Abstract:AIMTo investigate the efficacy of 0.2 mL vs. 0.6 mL of 2% lidocaine when given as a supplementary intraligamentary injection after a failed inferior alveolar nerve block (IANB).METHODOLOGYNinety-seven adult patients with symptomatic irreversible pulpits received an IANB and root canal treatment was initiated. Pain during treatment was recorded using a visual analogue scale (Heft-Parker VAS). Patients with unsuccessful anaesthesia (n = 78) randomly received intraligamentary injection of either 0.2 mL or 0.6 mL of 2% lidocaine with 1 : 80 000 epinephrine. Root canal treatment was reinitiated. Success after primary injection or supplementary injection was defined as no or mild pain (HP VAS score ≤54 mm) during access preparation and root canal instrumentation. Heart rate was monitored using a finger pulse oximeter. The anaesthetic success rates were analysed with Pearson chi-square test at 5% significance levels. The heart rate changes were analysed using t-tests.RESULTSThe intraligamentary injections with 0.2 mL solution gave an anaesthetic success rate of 64%, whilst the 0.6 mL was successful in 84% of cases with failed primary IANB. ($\chi 2$ = 4.3, P = 0.03). There was no significant effect of the volume of intraligamentary injection on the change in heart rate.CONCLUSIONSIncreasing the volume of intraligamentary injection improved the success rates after a failed primary anaesthetic injection.

Optimal Dose of Perineural Dexamethasone to Prolong Analgesia After Brachial Plexus Blockade: A Systematic Review and Meta-analysis.

Author(s): Kirkham, Kyle Robert; Jacot-Guillarmod, Alain; Albrecht, Eric

Source: Anesthesia and analgesia; Jan 2018; vol. 126 (no. 1); p. 270-279

Publication Type(s): Meta-analysis Journal Article Review

Available at Anesthesia and analgesia - from Ovid (Journals @ Ovid)

Abstract:BACKGROUNDPerineural dexamethasone has gained popularity in regional anesthesia to prolong analgesia duration. However, uncertainty remains regarding the optimal perineural dose. Clarification of this characteristic is of significant importance as the administration of dexamethasone may lead to dose-dependent complications. The objective of this meta-analysis was to define the optimal perineural dexamethasone dose to prolong analgesia after brachial plexus blockade for adult patients undergoing upper limb surgery.METHODSWe followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses statement guidelines and searched databases including MEDLINE, PubMed, and EMBASE until January 2017, without language restriction. Only trials comparing perineural dexamethasone and local anesthetics with local anesthetics alone for brachial plexus blocks were included in the present meta-analysis. The Cochrane Collaboration's Risk of Bias Tool was used to assess the methodological quality of each trial

and meta-analyses were performed following a random effects model. The primary outcome was duration of analgesia for each type of local anesthetic (short-/intermediate-acting and long-acting local anesthetics). A meta-regression followed by a subgroup analysis were performed to assess the impact of different perineural dexamethasone doses on duration of analgesia; for the latter analysis, trials were grouped in low (1-4 mg) and moderate (5-10 mg) dexamethasone doses. Secondary outcomes included the rate of neurologic complication and resting pain scores and morphine consumption within the first 24 hours.RESULTSThirty-three controlled trials, including 2138 patients, were identified. The meta-regression revealed a ceiling effect with a perineural dexamethasone dose of 4 mg when combined with short-/intermediate-acting (8 trials; 366 participants) or long-acting local anesthetics (23 trials; 1869 participants). This finding was confirmed by subgroup analyses comparing low and moderate dexamethasone doses. With short-/intermediate-acting local anesthetics, the mean difference (95% confidence interval) of analgesia duration with low and moderate doses was 277 (234-322) minutes and 229 (161-297) minutes, respectively. With long-acting local anesthetics, the mean differences with low and moderate doses were 505 (342-669) minutes and 509 (443-575) minutes. Perineural dexamethasone did not increase the rate of neurologic complications (risk ratio [95% confidence interval], 1.40 [0.54-3.63]). The Grades of Recommendation, Assessment, Development, and Evaluation quality of evidence for the primary and secondary outcomes were very low, due mainly to limitations, inconsistency, indirectness, and publication bias.CONCLUSIONSThere is currently very low quality evidence that 4 mg of perineural dexamethasone represents a ceiling dose that prolongs analgesia duration by a mean period of 6 and 8 hours when combined with short-/intermediate- or long-acting local anesthetics, respectively. Additional data are needed to explore the threshold for this effect, particularly with doses below 4 mg. The risk of neurologic complications is probably not increased (very low evidence).

Anesthetic Management of Narcolepsy Patients During Surgery: A Systematic Review.

Author(s): Hu, Sally; Singh, Mandeep; Wong, Jean; Auckley, Dennis; Hershner, Shelley; Kakkar, Rahul

Source: Anesthesia and analgesia; Jan 2018; vol. 126 (no. 1); p. 233-246

Publication Type(s): Case Reports Journal Article Review

Available at Anesthesia and analgesia - from Ovid (Journals @ Ovid)

Abstract:BACKGROUNDNarcolepsy is a rare sleep disorder characterized by excessive daytime sleepiness, sleep paralysis, and/or hypnagogic/hypnopompic hallucinations, and in some cases cataplexy. The response to anesthetic medications and possible interactions in narcolepsy patients is unclear in the perioperative period. In this systematic review, we aim to evaluate the current evidence on the perioperative outcomes and anesthetic considerations in narcolepsy patients.METHODSElectronic literature search of Medline, Medline in-process, Embase, Cochrane Database of Systematic Reviews databases, international conference proceedings, and abstracts was conducted in November 2015 according to the Preferred Reporting Items for Systematic Reviews and Meta-Analysis Protocols guideline. A total of 3757 articles were screened using a 2-stage strategy (title-abstract followed by full text). We included case studies/series, cohort studies, and randomized controlled trials of narcolepsy patients undergoing surgical procedures under anesthesia or sedation. Preoperative narcolepsy symptoms and sleep study data, anesthetic technique, and perioperative complications were extracted. Screening of articles, data extraction, and compilation were conducted by 2 independent reviewers and any conflict was resolved by the senior author.RESULTSA total of 19 studies including 16 case reports and 3 case series were included and evaluated. The majority of these patients received general anesthesia, whereas a small percentage of patients received regional anesthesia. Reported complications of narcolepsy patients undergoing surgeries were mainly related to autonomic dysregulation, or worsening of narcolepsy symptoms intra/postoperatively. Narcolepsy symptoms worsened only in those patient populations where the preoperative medications were either discontinued or reduced (mainly in obstetric patients). In

narcolepsy patients, use of depth of anesthesia monitoring and total intravenous technique may have some advantage in terms of safety profile. Several patients undergoing neurosurgery involving the hypothalamus or third or four ventricles developed new-onset narcolepsy.CONCLUSIONSWe found a paucity of prospective clinical trials in this patient population, as most of the studies were case reports or observational studies. Continuation of preoperative medications, depth of anesthesia monitoring, use of multimodal analgesia with short-acting agents and regional anesthesia techniques were associated with favorable outcomes. Obstetric patients may be at greater risk for worsening narcolepsy symptoms, possibly related to a reduction or discontinuation of medications. For neurosurgical procedures involving the hypothalamus or third and fourth ventricle, postoperative considerations should include monitoring for symptoms of narcolepsy. Future studies are needed to better define perioperative risks associated with anesthesia and surgery in this population of patients.

Erratum: The effect of combined spinal-epidural versus epidural analgesia in laboring women on nonreassuring fetal heart rate tracings: Systematic review and meta-analysis (Anesthesia and Analgesia (2016) 123 (955-964) DOI: 10.1213/ANE.0000000000001412)

Author(s): anonymous

Source: Anesthesia and Analgesia; Jan 2018; vol. 126 (no. 1); p. 372

Publication Type(s): Erratum

Available at Anesthesia and Analgesia - from Ovid (Journals @ Ovid)

Abstract: The article, "The Effect of Combined Spinal-Epidural Versus Epidural Analgesia in Laboring Women on Nonreassuring Fetal Heart Rate Tracings: Systematic Review and Meta-analysis," that appeared in the October 2016 issue on page 963, contained an error.The author contributions should be listed as: Name: Judith Hattler, MD. Contribution: This author helped design the review, conduct the review, analyze the data, and wrote the manuscript. Name: Markus Klimek, MD, PhD, DEAA, EDIC. Contribution: This author helped conduct the review, analyze the data, and critically revised the manuscript. Name: Rolf Rossaint, MD, PhD. Contribution: This author helped design the review, analyze the data, and critically revised the manuscript. Name: Michael Heesen, MD, PhD. Contribution: This author helped design the review, conduct the review, analyze the data, and critically revised the manuscript. The authors regret this error.

Efficacy and safety of etomidate-based sedation compared with propofol-based sedation during ERCP in low-risk patients: a double-blind, randomized, noninferiority trial

Author(s): Park C.H.; Park S.W.; Hyun B.; Lee J.; Kae S.H.; Jang H.J.; Koh D.H.; Choi M.H.

Source: Gastrointestinal Endoscopy; Jan 2018; vol. 87 (no. 1); p. 174-184

Publication Type(s): Article

Abstract: Background and Aims Etomidate is a short-acting intravenous hypnotic with a safety profile that is superior to alternative drugs such as propofol. However, there is a lack of evidence on the safety of etomidate in ERCP. The objective of this study was to compare efficacy and safety profiles of etomidate and propofol for endoscopic sedation. Methods This single-center, randomized, double-blind, noninferiority trial included patients with American Society of Anesthesiologists (ASA) physical status I to II who had been scheduled for ERCP. All patients received.05 mg/kg midazolam intravenously as pretreatment before receiving etomidate or propofol. Either etomidate or propofol was then administered according to group allocation. The primary endpoint was an overall respiratory event. A noninferiority margin of 10% was assumed. Results Sixty-three and 64 patients were enrolled in the etomidate and propofol groups, respectively. Respiratory events were identified in 10 patients (15.6%) in the etomidate group and 16 patients (25.4%) on the propofol

group, with a rate difference of -9.8% (1-sided 97.5% confidence interval, - to 4.2%). The overall incidence of cardiovascular events tended to be higher in the etomidate group (67.2% vs 50.8%, P =.060). In particular, tachycardia (heart rate > 100 beats/min) was more common in the etomidate group than in the propofol group (64.1% vs 34.9%, P =.001). Transient hypotension tended to be less common in the etomidate group (6.3 vs 15.9%, P =.084). Conclusions Etomidate-based sedation during ERCP was noninferior to propofol-based sedation in terms of the overall incidence of respiratory events in patients with ASA physical status I to II. (International Clinical Trials Registry Platform number: KCT0001926.)

Paravertebral Block for Thoracic Surgery

Author(s): D'Ercole F.; Arora H.; Kumar P.A.

Source: Journal of Cardiothoracic and Vascular Anesthesia; 2017

Publication Type(s): Article In Press

Abstract: Local anesthetic injected into a wedge-shaped space lateral to the spinal nerves as they emerge from the intervertebral foramina produces somatosensory and sympathetic nerve blockade effective for anesthesia and for managing pain of unilateral origin from the chest and abdomen. Paravertebral blockade (PVB) is versatile and may be applied unilaterally or bilaterally. Unlike thoracic epidural, the PVB technique may be used to avoid contralateral sympathectomy, thereby minimizing hypotension and leading to better preservation of blood pressure. There are no reports on systemic toxicity associated with bilateral PVB despite the need for relatively large doses of local anesthetics. This review includes an important historic background and captures the resurgence of PVB-an almost lost technique. Thoracic PVB provides post-thoracotomy pain relief comparable with thoracic epidural analgesia (TEA) with lower side effects supported by moderate-quality evidence. The feasibility and potential of bilateral thoracic PVB for bilateral thoracic surgery appear practical. However, there is existing controversy in the assumption that thoracic PVB is a satisfactory, safer alternative when anticoagulation status is a contraindication to thoracic epidural placement. During the last 2 decades of systematic reviews and meta-analyses, both TEA and PVB have been deemed appropriate in the management of thoracic surgery. A multimodal approach to analgesia includes regional techniques for thoracic surgery that may reduce the likelihood of the development of postoperative complications and chronic pain. Purpose of This Review: The authors evaluated current opinion, clinical practice, new multimodal adjuvants, regional anesthesia, and innovation and technology related PVB in the thoracic surgery patient population. The review focuses on history, techniques, application, ease of placement, and relative safety of this regional technique. For this review, studies and reference lists were retrieved from the Cochrane library, Embase, and Medline from January 1995 through January 2017. Summary: Existing evidence demonstrates noninferiority of thoracic PVB compared with TEA for postoperative analgesia, with fewer side effects for unilateral and bilateral thoracic surgery, including video-assisted thoracoscopy. The determining factors in selecting the regional technique of choice include the following: (1) tolerance of side effects associated with TEA, (2) consensus on best practice or technique, and (3) operator experience. There is no consensus on the optimal approach for thoracic PVB technique or any standardization when comparing the landmark, ultrasound-guided, or stimulation-based PVB approaches. Moreover, the efficacy of TEA compared with PVB in preventing post-thoracotomy chronic pain syndrome has not been investigated thoroughly and requires future clinical trials. Copyright © 2017 Elsevier Inc.

Crystalloid Coload Reduced the Incidence of Hypotension in Spinal Anesthesia for Cesarean Delivery, When Compared to Crystalloid Preload: A Meta-Analysis.

Author(s): Ni, Hai-Fang; Liu, Hua-yue; Zhang, Juan; Peng, Ke; Ji, Fu-Hai

Source: BioMed Research International; Dec 2017 ; p. 1-10

Publication Type(s): Academic Journal

Available at BioMed Research International - from EBSCO (MEDLINE Complete)

Abstract: Objective. To determine whether crystalloid infusion just after intrathecal injection (coload) would be better than infusion before anesthesia (preload) for hypotension prophylaxis in spinal anesthesia for cesarean delivery. Methods. We searched PubMed, EMBASE, Cochrane Central Register of Controlled Trials, and other databases for randomized controlled trials comparing coload of crystalloid with preload in parturients receiving spinal anesthesia for cesarean delivery. Primary outcome was intraoperative incidence of hypotension. Other outcomes were intraoperative need for vasopressors, hemodynamic variables, neonatal outcomes (umbilical artery pH and Apgar scores), and the incidence of maternal nausea and vomiting. We used RevMan 5.2 and STATA 12.0 for the data analyses. Results. Ten studies with 824 cases were included. The incidence of hypotension was significantly higher in the preload group compared with the coload group (57.8% versus 47.1%, odds ratio [OR] = 1.62, 95% confidence interval [CI] = 1.11–2.37, and P=0.01). More patients needed intraoperative vasopressors (OR = 1.71, 95% CI = 1.07–2.04, and P=0.02) when receiving crystalloid preload. In addition, the incidence of nausea and vomiting was higher in the preload group (OR = 3.40, 95% CI = 1.88–6.16, and P<0.0001). There were no differences in neonatal outcomes between the groups. Conclusions. For parturients receiving crystalloid loading in spinal anesthesia for cesarean delivery, coload strategy is superior to preload for the prevention of maternal hypotension.

Is intravenous lidocaine effective for decreasing pain and speeding up recovery after surgery?

Author(s): González, María Magdalena; Altermatt, Fernando

Source: Medwave; Dec 2017; vol. 17 (no. 9); p. e7121

Publication Type(s): Journal Article

Available at Medwave - from medwave.cl

Abstract:INTRODUCTIONLidocaine is widely used in anesthesia due to its multiple properties, including its role as analgesic. However, it is not entirely clear which are the real benefits of its use in the perioperative setting.METHODSTo answer this question we used Epistemonikos, the largest database of systematic reviews in health, which is maintained by screening multiple information sources, including MEDLINE, EMBASE, Cochrane, among others. We extracted data from the systematic reviews, reanalyzed data of primary studies, conducted a meta-analysis and generated a summary of findings table using the GRADE approach.RESULTS AND CONCLUSIONSWe identified 15 systematic reviews including 53 studies overall, all of them randomized controlled trials. We concluded the use of intravenous perioperative lidocaine probably results in a clinically irrelevant difference in pain and length of hospital stay, but it probably prevents postoperative nausea and vomiting.

Adductor Canal Block With Continuous Infusion Versus Intermittent Boluses and Morphine Consumption: A Randomized, Blinded, Controlled Clinical Trial.

Author(s): Jaeger, Pia; Baggesgaard, Jonas; Sørensen, Johan K; Ilfeld, Brian M; Gottschau, Bo

Source: Anesthesia and analgesia; Dec 2017

Publication Type(s): Journal Article

Available at Anesthesia and analgesia - from Ovid (Journals @ Ovid)

Abstract:BACKGROUNDBased on the assumption that relatively large volumes of local anesthetic optimize an adductor canal block (ACB), we theorized that an ACB administered as repeated boluses would improve analgesia without compromising mobility, compared with a continuous

infusion.METHODSWe performed a randomized, blinded, controlled study, including patients scheduled for total knee arthroplasty with spinal anesthesia. Patients received 0.2% ropivacaine via a catheter in the adductor canal administered as either repeated intermittent boluses (21 mL/3 h) or continuous infusion (7 mL/h). The primary outcome was total (postoperative day [POD], 0-2) opioid consumption (mg), administered as patient-controlled analgesia. Pain, ambulation, and quadriceps muscle strength were secondary outcomes.RESULTSWe randomized 110 patients, of whom 107 were analyzed. Total opioid consumption (POD, 0-2) was a median (range) of 23 mg (0-139) in the bolus group and 26 mg (3-120) in the infusion group (estimated median difference, 4 mg; 95% confidence interval [CI], -13 to 5; P = .29). Linear mixed-model analyses revealed no difference in pain during knee flexion (mean difference, 2.6 mm; 95% CI, -2.9 to 8.0) or at rest (mean difference, 1.7 mm; 95% CI, -1.5 to 4.9). Patients in the bolus group had improved quadriceps sparing on POD 2 (median difference, 7.4%; 95% CI, 0.5%-15.5%). However, this difference was not present on POD 1 or reflected in the ambulation tests (P > .05).CONCLUSIONSChanging the mode of administration for an ACB from continuous infusion to repeated intermittent boluses did not decrease opioid consumption, pain, nor mobility.

Comparison of DNA Damage and Oxidative Stress in Patients Anesthetized With Desflurane Associated or Not With Nitrous Oxide: A Prospective Randomized Clinical Trial.

Author(s): Nogueira, Flávia R; Braz, Leandro G; Souza, Kátina M; Aun, Aline G; Arruda, Nayara M

Source: Anesthesia and analgesia; Dec 2017

Publication Type(s): Journal Article

Available at Anesthesia and analgesia - from Ovid (Journals @ Ovid)

Abstract:BACKGROUNDLittle is known about the effects of desflurane associated or not with nitrous oxide (N2O) on oxidative stress and patient genetic material. The aim of this study was to compare the effects of anesthesia maintained with desflurane associated or not with N2O on DNA damage (as a primary outcome) and oxidative stress (as a secondary outcome) in patients who underwent an elective minimally invasive surgery.METHODSThis prospective randomized clinical trial analyzed 40 patients of both sexes with an American Society of Anesthesiologists physical status I who were 18-50 years of age and scheduled for septoplasty. The patients were randomly allocated into 2 groups according to anesthesia maintenance as follows: desflurane (n = 20) or desflurane/N2O (n = 20). Blood samples were collected before anesthesia (T1 = baseline), 1.5 hours after anesthesia induction (T2), and on the morning of the postoperative first day (T3). Basal and oxidative DNA damage (determined using formamidopyrimidine DNA glycosylase to detect oxidized purines and endonuclease III to detect oxidized pyrimidines) were evaluated using the comet assay. Oxidative stress markers were evaluated based on lipid peroxidation (by assessing 4-hydroxynonenal and 8-iso-prostaglandin F2α [8-isoprostane] using enzyme linked immunosorbent immunoassay), protein carbonyls (assessed by enzyme linked immunosorbent immunoassay), and antioxidant defense (ferric-reducing antioxidant power by spectrophotometry). The effect size was expressed as the mean differences between groups and the corresponding 95% confidence interval (CI).RESULTSThere was no significant mean difference between groups in relation to DNA damage (-1.7 [95% CI, -7.0 to 3.5]), oxidized DNA pyrimidines (-1.8 [95% CI, -12.5 to 8.9]) and purines (-1.9 [95% CI, -13.9 to 10.1]), 4-hydroxynonenal (-0.2 [95% CI, -2.8 to 2.4]), 8-isoprostane (549 [95% CI, -2378 to 3476]), protein carbonyls (0.2 [95% CI, -2.1 to 2.3]), or ferric-reducing antioxidant power (24 [95% CI, -52.0 to 117.2]).CONCLUSIONSThe coadministration of 60% N2O with desflurane did not seem to impair the effects on DNA or the redox status compared with desflurane anesthesia, suggesting that both studied anesthetic techniques can be suitable options for healthy individuals who undergo minimally invasive surgery lasting at least 1.5 hours. However, due to the low power of the study, more research is necessary to confirm our findings.

The correlation of the depth of anesthesia and postoperative cognitive impairment: A meta-analysis based on randomized controlled trials.

Author(s): Lu, Xing; Jin, Xin; Yang, Suwei; Xia, Yanfei

Source: Journal of clinical anesthesia; Dec 2017; vol. 45 ; p. 55-59

Publication Type(s): Journal Article

Abstract:STUDY OBJECTIVE AND BACKGROUNDTo comprehensively evaluate the associations between the depth of anesthesia and postoperative delirium (POD) or postoperative cognitive dysfunction (POCD).DESIGNUsing the Cochrane evaluation system, the included studies were conducted with quality assessment.DATA SOURCESWe searched Cochrane library, Embase and PubMed databases without language restriction. The retrieval time is up to August 2017.ELIGIBILITY CRITERIAAccording to the PRISMA guideline, the results associated with POCD and POD separately were compared between low and high bispectral index (BIS) groups under fixed effects model or random effects model. Besides, the risk ratio (RR) and 95% confidence intervals (95% CIs) were utilized as the effect sizes for merging the results. Furthermore, sensitivity analysis was performed to evaluate the stability of the results. Using Egger's test, publication bias was assessed for the included studies.RESULTSTotally, 4 studies with high qualities were selected for this meta-analysis. The merged results of POCD showed no significant difference between low and high BIS groups (RR (95% CI)=0.84 (0.21, 3.45), P>0.05). Sensitivity analysis showed that the merged results of POCD were not stable (RR (95%CI)=0.41 (0.17, 0.99)-1.88 (1.09, 3.22), P=0.046). Additionally, no significant publication bias for POCD was found (P=0.385).CONCLUSIONThere was no significant correlation between the depth of anesthesia and POCD.

Comparison of Arndt-endobronchial blocker plus laryngeal mask airway with left-sided double-lumen endobronchial tube in one-lung ventilation in thoracic surgery in the morbidly obese.

Author(s): Zhang, Z J; Zheng, M L; Nie, Y; Niu, Z Q

Source: Brazilian journal of medical and biological research = Revista brasileira de pesquisas medicas e biologicas; Dec 2017; vol. 51 (no. 2); p. e6825

Publication Type(s): Journal Article

Abstract: This study aimed to evaluate the feasibility and performance of Arndt-endobronchial blocker (Arndt) combined with laryngeal mask airway (LMA) compared with left-sided double-lumen endobronchial tube (L-DLT) in morbidly obese patients in one-lung ventilation (OLV). In a prospective, randomized double-blind controlled clinical trial, 80 morbidly obese patients (ASA I-III, aged 20-70) undergoing general anesthesia for elective thoracic surgeries were randomly allocated into groups Arndt (n=40) and L-DLT (n=40). In group Arndt, a LMA™ Proseal was placed followed by an Arndt-endobronchial blocker. In group L-DLT, patients were intubated with a left-sided double-lumen endotracheal tube. Primary endpoints were the airway establishment, ease of insertion, oxygenation, lung collapse and surgical field exposure. Results showed similar ease of airway establishment and tube/device insertion between the two groups. Oxygen arterial pressure (PaO2) of patients in the Arndt group was significantly higher than L-DLT (154±46 vs 105±52 mmHg; P<0.05). Quality of lung collapse and surgical field exposure in the Arndt group was significantly better than L-DLT (effective rate 100 vs 90%; P<0.05). Duration of surgery and anesthesia were significantly shorter in the Arndt group (2.4±1.7 vs 3.1±1.8 and 2.8±1.9 vs 3.8±1.8 h, respectively; P<0.05). Incidence of hoarseness of voice and incidence and severity of throat pain at the post-anesthesia care unit and 12, 24, 48, and 72 h after surgery were significantly lower in the Arndt group (P<0.05). Findings suggested that Arndt-endobronchial blocker combined with LMA can serve as a promising alternative for morbidly obese patients in OLV in thoracic surgery.

Pectoral nerve blocks to improve analgesia after breast cancer surgery: A prospective, randomized and controlled trial.

Author(s): M, Neethu; Pandey, Ravinder Kumar; Sharma, Ankur; Darlong, Vanlalnghaka;

Source: Journal of clinical anesthesia; Dec 2017; vol. 45 ; p. 12-17

Publication Type(s): Journal Article

Abstract:STUDY OBJECTIVETo evaluate the analgesic efficacy of ultrasound guided combined pectoral nerve blocks I and II in patients scheduled for surgery for breast cancer.DESIGNProspective, randomized, control trial.SETTINGOperating rooms in a tertiary care hospital of Northern India.PATIENTSSixty American Society of Anesthesiologists status I to II adult women, aged 18-70years were enrolled in this study.INTERVENTIONSPatients were randomized into two groups (30 patients in each group), PECS (P) group and control (C) group. In group P, patients received both general anesthesia and ultrasound guided combined pectoral nerve blocks (PECS I and II). In group C, patients received only general anesthesia.MEASUREMENTSWe noted pain intensity at rest and during abduction of the ipsilateral upper limb, incidence of postoperative nausea and vomiting; patient's satisfaction with postoperative analgesia and maximal painless abduction at different time intervals in both groups.MAIN RESULTSThere was significant decrease in the total amount of fentanyl requirement in the in P group {(140.66±31.80μg) and (438±71.74μg)} in comparison to C group {(218.33±23.93μg) and (609±53.00μg)} during intraoperative and post-operative period upto 24h respectively. The time to first analgesic requirement was also more in P group (44.33±17.65min) in comparison to C group (10.36±4.97min) during post-operative period. There was less limitation of shoulder movement (pain free mobilization) on the operative site at 4h and 5h after surgery in P group in comparison to C group. However there was no difference in the incidence of post-operative nausea and vomiting (22 out of 30 patients in group P and 20 out of 30 patients in group C) but patients in group P had a better satisfaction score with postoperative analgesia than C group having a p value of <0.001(Score 1; 5 VS 20; Score 2; 12 VS 9; Score 3; 13 VS 1).CONCLUSIONSUltrasound guided combined pectoral nerve blocks are an effective modality of analgesia for patients undergoing breast surgeries during perioperative period.CLINICAL TRIAL REGISTRATIONCTRI/2015/12/006457.

Intravenous dexamethasone for prophylaxis of postoperative nausea and vomiting after administration of long-acting neuraxial opioids: a systematic review and meta-analysis.

Author(s): Grape, S; Usmanova, I; Kirkham, K R; Albrecht, E

Source: Anaesthesia; Dec 2017

Publication Type(s): Journal Article Review

Abstract: Long-acting neuraxial opioids provide excellent analgesia after surgery, but are associated with higher rates of postoperative nausea and vomiting. Dexamethasone effectively prevents postoperative nausea and vomiting after general anaesthesia, but its value in patients receiving long-acting neuraxial opioids is undetermined. Therefore, the objective of this meta-analysis was to assess the prophylactic anti-emetic efficacy of intravenous (i.v.) dexamethasone in this population. The study methodology followed the PRISMA statement guidelines. The primary outcome was the need for rescue anti-emetics during the first 24 postoperative hours, analysed according to the dose of dexamethasone (low-dose 2.5-5.0 mg; intermediate dose 6.0-10.0 mg), timing of administration (beginning or end of surgery) and route of long-acting opioid administration (intrathecal or epidural). Additionally, the rates of complications (restlessness, infection, hyperglycaemia) were sought. Thirteen trials were identified, representing a total of 1111 patients. When compared with placebo, intravenous dexamethasone reduced the need for rescue anti-emetics (risk ratio (95%CI) 0.44 (0.35-0.56); I2 = 43%; p < 0.00001; quality of GRADE evidence: moderate), without differences between dexamethasone doses (p for sub-group difference = 0.67), timing of administration (p for sub-group

difference = 0.32) or route of long-acting opioid (p for sub-group difference = 0.10). No patients developed infection or restlessness among trials that sought these complications. No trial measured blood glucose levels. In conclusion, there is enough evidence to state that intravenous dexamethasone provides effective anti-emetic prophylaxis during the first 24 postoperative hours in patients who receive long-acting neuraxial opioids.

Impact of pectoral nerve block on postoperative pain and quality of recovery in patients undergoing breast cancer surgery: A randomised controlled trial.

Author(s): Kamiya, Yoshinori; Hasegawa, Miki; Yoshida, Takayuki; Takamatsu, Misako; Koyama, Yu

Source: European journal of anaesthesiology; Dec 2017

Publication Type(s): Journal Article

Abstract:BACKGROUNDIn recent years, thoracic wall nerve blocks, such as the pectoral nerve (PECS) block and the serratus plane block have become popular for peri-operative pain control in patients undergoing breast cancer surgery. The effect of PECS block on quality of recovery (QoR) after breast cancer surgery has not been evaluated.OBJECTIVESTo evaluate the ability of PECS block to decrease postoperative pain and anaesthesia and analgesia requirements and to improve postoperative QoR in patients undergoing breast cancer surgery.DESIGNRandomised controlled study.SETTINGA tertiary hospital.PATIENTSSixty women undergoing breast cancer surgery between April 2014 and February 2015.INTERVENTIONSThe patients were randomised to receive a PECS block consisting of 30 ml of levobupivacaine 0.25% after induction of anaesthesia (PECS group) or a saline mock block (control group). The patients answered a 40-item QoR questionnaire (QoR-40) before and 1 day after breast cancer surgery.MAIN OUTCOME MEASURESNumeric Rating Scale score for postoperative pain, requirement for intra-operative propofol and remifentanil, and QoR-40 score on postoperative day 1.RESULTSPECS block combined with propofol-remifentanil anaesthesia significantly improved the median [interquartile range] pain score at 6 h postoperatively (PECS group 1 [0 to 2] vs. Control group 1 [0.25 to 2.75]; P = 0.018]. PECS block also reduced propofol mean (± SD) estimated target blood concentration to maintain bispectral index (BIS) between 40 and 50 (PECS group 2.65 (± 0.52) vs. Control group 3.08 (± 0.41) μg ml; P < 0.001) but not remifentanil consumption (PECS group 10.5 (± 4.28) vs. Control group 10.4 (± 4.68) μg kg h; P = 0.95). PECS block did not improve the QoR-40 score on postoperative day 1 (PECS group 182 [176 to 189] vs. Control group 174.5 [157.75 to 175]).CONCLUSIONIn patients undergoing breast cancer surgery, PECS block combined with general anaesthesia reduced the requirement for propofol but not that for remifentanil, due to the inability of the PECS block to reach the internal mammary area. Further, PECS block improved postoperative pain but not the postoperative QoR-40 score due to the factors that cannot be measured by analgesia immediately after surgery, such as rebound pain.TRIAL REGISTRATIONThis trial is registered with the University Hospital Medical Information Network Clinical Trials Registry (UMIN000013435).

A comparison between inhalational (Desflurane) and total intravenous anaesthesia (Propofol and dexmedetomidine) in improving postoperative recovery for morbidly obese patients undergoing laparoscopic sleeve gastrectomy: A double-blinded randomised controlled trial.

Author(s): Elbakry, Abd-Elazeem; Sultan, Wesam-Eldin; Ibrahim, Ezzeldin

Source: Journal of clinical anesthesia; Dec 2017; vol. 45 ; p. 6-11

Publication Type(s): Journal Article

Abstract:STUDY OBJECTIVELaparoscopic sleeve gastrectomy is commonly performed under total intravenous anaesthesia (TIVA) or balanced anaesthesia using an intravenous and inhalation agent. It is still unclear which anaesthesia regimen is better for this group of patients. The present study has been conducted to compare the use of the inhalation anaesthesia technique using desflurane with

the TIVA technique, using propofol and dexmedetomidine.DESIGNProspective, randomised, double-blinded study.SETTINGMenoufia Univeristy Hospital.PATIENTSThis randomised trial was carried out on 100 morbidly obese patients undergoing laparoscopic sleeve gastrectomy. The patients were randomised into two equally sized groups; one group received the inhalation anaesthesia technique and the other received the TIVA technique.INTERVENTIONSAll patients received general anaesthesia, which was induced by propofol, remifentanil, and rocuronium. Anaesthesia was maintained using desflurane in oxygen air mixture in the inhalation group, whilst anaesthesia was maintained by intravenous infusion of propofol and dexmedetomidine in the TIVA group.MEASUREMENTSIntra-operative vital signs, anaesthesia recovery time, postoperative nausea and vomiting, pain score, post-anaesthetic care unit (PACU) stay time, total first 24h post-operative analgesic needs and the onset of first bowel movement were recorded. Main results The TIVA group had lower intra-operative heart rates and mean arterial blood pressure (P<0.0001). The TIVA group also had a lower post-operative visual analogue score for pain assessment (VAS) (P<0.0001), lower total analgesic requirements (P<0.0001), a lower incidence of nausea (P=0.01) and vomiting (P=0.03), and shorter PACU stays (P=0.01). There was no significant difference between groups with regard to the onset of bowel movement (P=0.16).CONCLUSIONSTIVA using propofol and dexmedetomidine is a better anaesthetic regimen than inhalation anaesthesia using desflurane for laparoscopic sleeve gastrectomy in morbidly obese patients. The TIVA technique provided better postoperative recovery with fewer postoperative side effects and analgesic requirements.CLINICAL TRIAL REGISTERY NUMBERNCT03029715.

Recovery characteristics of patients receiving either sugammadex or neostigmine and glycopyrrolate for reversal of neuromuscular block: a randomised controlled trial.

Author(s): Paech, M J; Kaye, R; Baber, C; Nathan, E A

Source: Anaesthesia; Dec 2017

Publication Type(s): Journal Article

Abstract: Sugammadex more rapidly and reliably reverses rocuronium-induced neuromuscular block compared with neostigmine, but it is not known if subsequent patient outcomes, including nausea, vomiting and other aspects of recovery are modified. In this study, we compared the recovery characteristics of sugammadex and neostigmine/glycopyrrolate following reversal of neuromuscular block. This was a single-centre, randomised, blinded, parallel-group clinical trial in women undergoing elective day-surgical laparoscopic gynaecological surgery, with a standardised general anaesthesia regimen that included rocuronium. Neuromuscular block was reversed with either sugammadex 2 mg.kg-1 or neostigmine 40 μg.kg-1 and glycopyrrolate 400 μg. The primary outcome was the incidence of nausea and vomiting during the first six postoperative hours. Secondary outcomes included other measures of postoperative recovery such as patient symptoms and recovery scores. Three-hundred and four women were analysed by intention-to-treat (sugammadex n = 151, neostigmine n = 153), which included four major protocol violations. There was no significant difference between sugammadex and neostigmine groups in the incidence of early nausea and vomiting (49.0% vs. 51.0%, respectively; OR 0.92, 95%CI 0.59-1.45; p = 0.731). Double vision (11.5% vs. 20.0%; p = 0.044) and dry mouth (71.6% vs. 85.5%; p = 0.003) were less common after sugammadex. Sedation scores at 2 h were also lower after sugammadex (median (IQR [range]) 0 (0-3 [0-10]) vs. 2 (0-4.[0-10]); p = 0.021). Twenty-four-hour recovery scores were not significantly different between groups. Reversal with sugammadex in this patient population did not reduce postoperative nausea or vomiting compared with neostigmine/glycopyrrolate.

Effectiveness of spinal anesthesia combined with obturator nerve blockade in preventing adductor muscle contraction during transurethral resection of bladder tumor.

Author(s): Alavi, Cyrus Emir; Asgari, Seyed Alaeddin; Falahatkar, Siavash; Rimaz, Siamak

Source: Turkish journal of urology; Dec 2017; vol. 43 (no. 4); p. 507-511

Publication Type(s): Journal Article

Available at Turkish journal of urology - from Europe PubMed Central - Open Access

Abstract: ObjectiveTo determine whether spinal anesthesia combined with obturator nerve blockade (SOB) is effective in preventing obturator nerve stimulation, jerking and bladder perforation during transurethral resection of bladder tumor (TURBT).Material and methodsIn this clinical trial, 30 patients were randomly divided into two groups: spinal anesthesia (SA) and SOB. In SA group, 2.5 cc of 0.5% bupivacaine was injected intrathecally using a 25-gauge spinal needle and in SOB after spinal anesthesia, a classic obturator nerve blockade was performed by using nerve stimulation technique.ResultsThere was a statistically significant difference between jerking in both groups (p=0.006). During the TURBT, surgeon satisfaction was significantly higher in SOB group compared to SA group (p=0.006). There was no significant correlation between sex, patient age and location of bladder tumor between the groups (p>0.05).ConclusionObturator nerve blockade by using 15 cc lidocaine 1% is effective in preventing adductor muscle spasms during TURBT.

Xenon as an adjuvant to sevoflurane anesthesia in children younger than 4 years of age, undergoing interventional or diagnostic cardiac catheterization: A randomized controlled clinical trial.

Author(s): Devroe, Sarah; Meeusen, Roselien; Gewillig, Marc; Cools, Bjorn; Poesen, Koen

Source: Paediatric anaesthesia; Dec 2017; vol. 27 (no. 12); p. 1210-1219

Publication Type(s): Journal Article

Available at Paediatric anaesthesia - from Ovid (Journals @ Ovid)

Abstract:BACKGROUNDXenon has repeatedly been demonstrated to have only minimal hemodynamic side effects when compared to other anesthetics. Moreover, in experimental models, xenon was found to be neuroprotective and devoid of developmental neurotoxicity. These properties could render xenon attractive for the anesthesia in neonates and infants with congenital heart disease. However, experience with xenon anesthesia in children is scarce.AIMSWe hypothesized that in children undergoing cardiac catheterization, general anesthesia with a combination of sevoflurane with xenon results in superior hemodynamic stability, compared to sevoflurane alone.METHODSIn this prospective, randomized, single-blinded, controlled clinical trial, children with a median age of 12 [IQR 3-36] months undergoing diagnostic/interventional cardiac catheterization were randomized to either general anesthesia with 50-65vol% xenon plus sevoflurane or sevoflurane alone. The primary outcome was the incidence of intraprocedural hemodynamic instability, defined as the occurrence of: (i) a heart rate change >20% from baseline; or (ii) a change in mean arterial blood pressure >20% from baseline; or (iii) the requirement of vasopressors, inotropes, chronotropes, or fluid boluses. Secondary endpoints included recovery characteristics, feasibility criteria, and safety (incidence of emergence agitation and postoperative vomiting.RESULTSAfter inclusion of 40 children, the trial was stopped as an a priori planned blinded interim analysis revealed that the overall rate of hemodynamic instability did not differ between groups [100% in both the xenon-sevoflurane and the sevoflurane group. However, the adjuvant administration of xenon decreased vasopressor requirements, preserved better cerebral oxygen saturation, and resulted in a faster recovery. Xenon anesthesia was feasible (with no differences in the need for rescue anesthetics in both groups).CONCLUSIONOur observations suggest that combining xenon with sevoflurane in preschool children is safe, feasible, and facilitates hemodynamic management. Larger and adequately powered clinical trials are warranted to investigate the impact of xenon on short- and long-term outcomes in pediatric anesthesia.

Total intravenous anesthesia vs single pharmacological prophylaxis to prevent postoperative vomiting in children: A systematic review and meta-analysis.

Author(s): Schaefer, Maximilian S; Kranke, Peter; Weibel, Stephanie; Kreysing, Robert; Ochel, Janika

Source: Paediatric anaesthesia; Dec 2017; vol. 27 (no. 12); p. 1202-1209

Publication Type(s): Journal Article Review

Available at Paediatric anaesthesia - from Ovid (Journals @ Ovid)

Abstract:BACKGROUNDPostoperative nausea and postoperative vomiting are frequent but often missed complications after general anesthesia in pediatric patients. Because inhaled anesthetics are known to trigger postoperative vomiting, total intravenous anesthesia is often administered in high-risk children to avoid the use of inhalational anesthesia. Since inhalational anesthesia might be advantageous in some situations, the question is raised whether administration of pharmacological prophylaxis offers equal protection from postoperative vomiting compared with total intravenous anesthesia alone.AIMThe aim of this systematic review was to compare total intravenous anesthesia with single-drug pharmacological prophylaxis for the protection of postoperative vomiting in pediatric patients.METHODSWe conducted a systematic review (EMBASE, MEDLINE, and CENTRAL) with meta-analysis on randomized controlled trials including patients <18 years of age undergoing general anesthesia, with one group receiving propofol-based total intravenous anesthesia and another group receiving inhalational anesthesia with single pharmacological prophylaxis. Primary outcome was the overall incidence for postoperative vomiting. Secondary outcomes included early and late postoperative vomiting, the need for postoperative antiemetic medication, time to first oral intake, duration of stay in the postanesthesia care unit, and any adverse events defined as such by the respective authors. Risk ratios (RR) or mean differences (MD) with 95% confidence intervals (95% CI) were calculated using a random effects model with inverse variance weighting.RESULTSFour randomized controlled trials including 558 children were included in the final analysis. All patients underwent strabismus surgery. Total intravenous anesthesia and single pharmacological prophylaxis were equally effective in preventing overall postoperative vomiting (RR 0.99 [95% CI 0.77; 1.27]; 4 trials), as well as vomiting in the early (1.48 [0.78; 2.83]; 4 trials) and late (0.89 [0.56;1.42]; 2 trials) postoperative period. There was no difference in the need for postoperative antiemetic medication. Although patients resumed drinking and eating significantly earlier following total intravenous anesthesia (MD -1.40 hours [-2.01; -0.80], P < .001), the duration of PACU stay did not differ between groups. The incidence of intraoperative oculocardiac reflex was the only reported adverse event, which was more likely to occur after total intravenous anesthesia (1.86 [1.01; 3.41]).CONCLUSIONSingle pharmacological prophylaxis appears equally effective compared with total intravenous anesthesia in preventing postoperative vomiting in pediatric patients. However, during strabismus surgery, total intravenous anesthesia increases the risk for bradycardia due to oculocardiac reflex. Thus, when anesthesia is maintained with inhalational anesthetics, its emetogenic effects can sufficiently be compensated by the addition of a single prophylactic antiemetic medication.

Effects of remifentanil with or without midazolam pretreatment on the 95% effective dose of propofol for loss of consciousness during induction: A randomized, clinical trial.

Author(s): Koh, Jae Chul; Park, Juyeon; Kim, Na Young; You, Ann Hee; Ko, Seo Hee; Han, Dong Woo

Source: Medicine; Dec 2017; vol. 96 (no. 49); p. e9164

Publication Type(s): Journal Article

Available at Medicine - from Europe PubMed Central - Open Access

Abstract:BACKGROUNDPropofol is a rapid, efficient hypnotic agent with antiemetic effects. However, a high dosage is related to hemodynamic abnormalities such as hypotension and bradycardia. Pretreatment with remifentanil can decrease injection pain and stabilize

hemodynamics during the induction period. Remifentanil or midazolam in combination with propofol can provide synergistic or additive effects during anesthesia induction. However, the hypnotic doses of propofol required in patients who receive pretreatment with remifentanil or midazolam remain unclear.METHODSPatients aged 20 to 50 years who were scheduled to undergo surgery under general anesthesia were enrolled in this study. The patients were randomized into 3 groups using a computer-generated randomization table. Patients in Group P (Propofol) received only propofol for loss of consciousness, those in Group PR (Propofol-Remifentanil) received remifentanil prior to propofol, and those in Group PMR (Propofol-Midazolam-Remifentanil) received remifentanil and midazolam prior to propofol. After propofol administration, loss of both the eyelash reflex and verbal response represented success. The 95% effective dose of propofol for loss of consciousness in each group, which was the primary outcome, was determined using a modified biased coin up-and-down method.RESULTSA total of 124 patients were initially enrolled. Of these, 4 were excluded, and the remaining 120 patients were randomized to each (n = 40) of the 3 groups. The 95% effective dose of propofol for loss of consciousness was 1.74 , 1.38, and 0.92 mg/kg in Groups P, PR, and PMR, respectively. Blood pressure decreased at 2 minutes after propofol administration in all the groups. However, compared with Group P, Groups PR and PMR exhibited a significant decrease in blood pressure.CONCLUSIONSThe effective dose of propofol for loss of consciousness could be decreased by 21% and 47% when remifentanil pretreatment was used without and with midazolam, respectively. However, the decrease in blood pressure was greater with pretreatment than sole propofol use. These findings suggest that the combination of remifentanil with or without midazolam may have no benefit on hemodynamic stability during induction using propofol.TRIAL REGISTRATIONNCT02536690 (clinicaltrials.gov).

Incidence of malignant hyperthermia in patients undergoing general anesthesia: Protocol for a systematic review and meta-analysis.

Author(s): In, Junyong; Ahn, Eun Jin; Lee, Dong Kyu; Kang, Hyun

Source: Medicine; Dec 2017; vol. 96 (no. 49); p. e9115

Publication Type(s): Journal Article

Available at Medicine - from Europe PubMed Central - Open Access

Abstract:BACKGROUNDMalignant hyperthermia (MH) continues to be of potential concern for clinicians whenever inhalational anesthetic agents or succinylcholine are used, because MH is a potentially fatal metabolic disorder.METHODSA systematic and comprehensive search will be performed using MEDLINE, EMBASE, and Google Scholar, for studies published up to November 2017. Peer-reviewed prospective cohort studies, retrospective cohort studies, and cross-sectional studies or reports issued by government organizations reporting the incidence or prevalence of MH will be eligible for inclusion. The quality of included studies will be assessed using the Newcastle-Ottawa scale and the modified risk of bias tool. Heterogeneity of estimates across studies as well as publication bias will be assessed. This systematic review and meta-analysis will be performed according to the Meta-analysis of Observational Studies in Epidemiology (MOOSE) guidelines and reported according to the Preferred Reporting Items for Systematic reviews and Meta-Analysis (PRISMA) guidelines. All statistical analyses will be conducted using the Stata SE version 15.0.RESULTSThe results of this systematic review and meta-analysis will be published in a peer-reviewed journal.CONCLUSIONTo our knowledge, this systematic review and meta-analysis will be the first to evaluate existing research on the incidence of MH. Our study will provide an overall estimate of the incidence of MH. Subgroup analysis will assess the incidence of MH according to age, gender, geographical region, race, and the provoking agent if possible. The review will benefit patients, healthcare providers, and policymakers.ETHICS AND DISSEMINATIONEthical approval and informed consent are not required, as the study will be a literature review and will not involve direct

contact with patients or alterations to patient care.TRIAL REGISTRATION NUMBERThe protocol for this review has been registered in the PROSPERO network (registration number: CRD42017076628).

The effect of sevoflurane compared to propofol maintenance on post-surgical quality of recovery in patients undergoing an ambulatory gynecological surgery: A prospective, randomized, double-blinded, controlled, clinical trial.

Author(s): De Oliveira, Gildasio S; Bialek, Jane; Rodes, Meghan E; Kendall, Mark C;

Source: Journal of clinical anesthesia; Dec 2017; vol. 43 ; p. 70-74

Publication Type(s): Journal Article

Abstract:OBJECTIVEThe main objective of the current investigation was to evaluate the effect of propofol used as anesthetic maintenance compared to sevoflurane on global post-surgical quality of recovery in female patients undergoing ambulatory gynecological surgery.DESIGNThe study was a prospective randomized double blinded, controlled, clinical trial.INTERVENTIONSHealthy female subjects were randomized to receive propofol or sevoflurane as anesthetic maintenance.MEASUREMENTSThe primary outcome was the Quality of Recovery 40 (QOR-40) questionnaire at 24h after surgery. Other data collected included opioid consumption, pain scores and time to hospital discharge. P<0.05 was used to reject the null hypothesis for the primary outcome.MAIN RESULTSNinety subjects were randomized and sixty seven completed the study. Patient's baseline characteristics and surgical factors were not different between study groups. There was not a clinically significant difference in the global QoR-40 scores between the sevoflurane and the propofol groups, median (IQR) of 175 (163 to 181) and 176 (163 to 184), respectively, P=0.97. There was an inverse relationship (ρ=-0.42) between the opioid consumption in PACU (IV morphine equivalents) and 24h postoperative quality of recovery (P<0.001) and an inverse relationship (ρ=-0.48) between the oral opioid consumption at home (oral morphine equivalents) and 24h postoperative quality of recovery, P<0.001.CONCLUSIONSOur current results do not support the use of total intravenous anesthesia as an efficacious strategy to improve global quality of recovery after ambulatory surgery. Opioid consumption in the PACU is an earlier surrogate that can be utilized to identify ambulatory patients with a high likelihood to develop poor global quality of recovery and who may benefit from more efficacious strategies to improve global quality of recovery.TRIAL REGISTRATIONClinicalTrial.gov; url: http://www.clinicaltrials.gov; registration identified: NCT 01755234.

Pharmacokinetic and pharmacodynamics of intravenous dexmedetomidine in morbidly obese patients undergoing laparoscopic surgery.

Author(s): Xu, Bo; Zhou, Dongxu; Ren, Li; Shulman, Steven; Zhang, Xingan; Xiong, Ming

Source: Journal of anesthesia; Dec 2017; vol. 31 (no. 6); p. 813-820

Publication Type(s): Journal Article

Abstract:BACKGROUNDThis study was designed to investigate the pharmacokinetics and pharmacodynamics of dexmedetomidine in morbidly obese patients undergoing laparoscopic surgery.METHODSMorbidly obese (body mass index ≥40 kg/m2) and normal weight patients scheduled for elective laparoscopic surgery were included (n = 8, each group). After baseline hemodynamic measurement, dexmedetomidine 1 μg/kg was administered over 10 min. General anesthesia was induced with propofol 1.5 mg/kg and fentanyl 4 μg/kg 20 min after completion of dexmedetomidine infusion; the lungs were mechanically ventilated after tracheal intubation. The pharmacokinetics of dexmedetomidine was analyzed by a noncompartment model. Hemodynamic data and peripheral oxygen saturation (SpO2) were measured up to 30 min after starting dexmedetomidine infusion. Sedation level was measured with the Observer's Assessment of Alertness/Sedation (OAA/S) scale.RESULTSPeak plasma concentration, area under the curve to

infinity, elimination half-life, and apparent volume of distribution were significantly larger in morbidly obese than in normal weight patients (3.75 ± 0.56 vs. 2.54 ± 0.32 μg/l, P < 0.001; 2174 ± 335 vs. 1594 ± 251 ng h/l, P < 0.001; 225 ± 55 vs. 158 ± 53 min, P = 0.02; 310 ± 63 vs. 164 ± 41 l, P < 0.001, respectively). Although clearance was also higher in obese patients than in normal body weight patients (58.6 ± 10.7 vs. 44.9 ± 9.0 l/h, P = 0.02), it was lower in obese patients than in normal body weight patients after normalization to total body weight (0.47 ± 0.07 vs. 0.64 ± 0.09 l/h/kg, P < 0.001). There were no differences in systolic or diastolic blood pressure or heart rate between the two groups within the 30 min. Sedation level was deeper and SpO2 was lower in morbidly obese than in normal weight patients. More patients in the morbidly obese patient group experienced deeper sedation after the start of the dexmedetomidine infusion (P < 0.05).CONCLUSIONThe pharmacokinetics and pharmacodynamics of dexmedetomidine are significantly different in morbidly obese patients compared with normal weight patients. Level of sedation was significantly deeper, and oxygen saturation was significantly lower, in morbidly obese than in normal weight patients, probably resulting from higher plasma concentration after infusion of 1.0 μg/kg.CLINICAL TRIAL NUMBER, REGISTRY URLClinicalTrials.gov (NCT01864187), https://register.clinicaltrials.gov/prs/app/action/LoginUser?ts=1&cx=-jg9qo4 .

Clinical trial registry use in anaesthesiology systematic reviews: A cross-sectional study of systematic reviews published in anaesthesiology journals and the Cochrane Library.

Author(s): Umberham, Blake A; Detweiler, Byron N; Sims, Matthew T; Vassar, Matt

Source: European journal of anaesthesiology; Dec 2017; vol. 34 (no. 12); p. 797-807

Publication Type(s): Journal Article

Abstract:BACKGROUNDPublication bias within systematic reviews may result in incorrect conclusions leading to inappropriate clinical decisions and a decreased quality of patient care. Searching clinical trial registries for unpublished studies is one possible solution to minimise publication bias.OBJECTIVESTo examine rates of clinical trial registry searches in systematic reviews published in respected anaesthesiology journals and whether these searches found trials (or data) eligible for inclusion; to compare rates of registry searches between published reviews and similar reviews within the Cochrane Anaesthesia, Critical and Emergency Care Group; to conduct trial registry searches for a subset of reviews, determining whether eligible studies were overlooked; to investigate whether reporting of results in completed anaesthesia trials on ClinicalTrials.gov followed guidelines.DESIGNA cross-sectional study of systematic reviews published in 10 anaesthesiology journals and the Cochrane Library.SETTING AND PARTICIPANTSPubMed and the Cochrane Library were searched for systematic reviews or meta-analyses.MAIN OUTCOME MEASURESThe primary outcome was the number of systematic reviews that searched clinical trial registries for unpublished trials. Secondary outcomes included the number of registered trials in the ClinicalTrial.gov registry and the number of trials reporting trial results which were available on the ClinicalTrials.gov database and which should have been considered in a systematic review.RESULTSThe PubMed search yielded 507 records, and 415 remained after exclusions. Of these, 49 (11.8%) included a search of clinical trial registries. In total, 12 systematic reviews reported finding unpublished data but only five incorporated the data into their analyses. Of the Cochrane reviews, 58.9% (43/73) reported registry searches. Among a sample of 30 systematic reviews that omitted registry searches, we found many studies within the registries that were probably eligible to be included in the systematic reviews. For completed trials within the ClinicalTrials.gov database, only 15.4% reported results.CONCLUSIONThe majority of systematic reviews in anaesthesiology did not include data from clinical trial registries. Exclusion of statistically nonsignificant data may lead to a biased interpretation of the data and hence inappropriate clinical interventions.TRIAL REGISTRATIONRegistered in University hospital Medical Information Network (UMIN) Clinical Trials Registry (UMIN000021932).

The hemodynamic and pain impact of peripheral nerve block versus spinal anesthesia in diabetic patients undergoing diabetic foot surgery.

Author(s): Lai, Hou Yee; Foo, Li Lian; Lim, Siu Min; Yong, Chen Fei; Loh, Pui San; Chaw, Sook Hui

Source: Clinical autonomic research : official journal of the Clinical Autonomic Research Society; Dec 2017

Publication Type(s): Journal Article

Abstract:PURPOSEComparison of hemodynamic profiles and pain scores in diabetic patients undergoing diabetic foot surgery receiving peripheral nerve block (PNB) or spinal anesthesia [subarachnoid block (SAB)].METHODSThis was a prospective, randomised controlled trial. We recruited diabetic patients aged > 18 years, American Society of Anesthesiologists class II-III, who were scheduled for unilateral diabetic foot surgery below the knee. All patients were assessed for autonomic dysfunction using the Survey of Autonomic Symptoms score. Participants were randomly assigned to receive either PNB or SAB for the surgery. Hemodynamic data, including usage of vasopressors, were recorded at 5-min intervals for up to 1 h after the induction of anesthesia. Pain scores were recorded postoperatively, and follow-up was done via telephone 6 months later.RESULTSCompared to the PNB group, the SAB group had a larger number of patients with significant hypotension (14 vs. 1; p = 0.001) and more patients who required vasopressor boluses (6 vs. 0 patients). Compared to SAB group, the patients in the PNB group had a longer postoperative pain-free duration (9 vs. 4.54 h; p = 0.002) and lower pain scores 1 day after surgery (3.63 vs. 4.69; p = 0.01).CONCLUSIONPeripheral nerve block should be considered, whenever possible, as the first option of anesthesia for lower limb surgery in diabetic patients as it provides hemodynamic stability and superior postoperative pain control compared to SAB.TRIAL REGISTRATIONClinical trial registry: ClinicalTrials.gov. ID NCT02727348.

Effect of an Intravenous Dexamethasone Added to Caudal Local Anesthetics to Improve Postoperative Pain: A Systematic Review and Meta-analysis With Trial Sequential Analysis.

Author(s): Kawakami, Hiromasa; Mihara, Takahiro; Nakamura, Nobuhito; Ka, Koui; Goto, Takahisa

Source: Anesthesia and analgesia; Dec 2017; vol. 125 (no. 6); p. 2072-2080

Publication Type(s): Meta-analysis Journal Article Review

Available at Anesthesia and analgesia - from Ovid (Journals @ Ovid)

Abstract:BACKGROUNDCaudal anesthesia has been used for postoperative pain control in pediatric surgical patients, but the duration of the analgesic effect is occasionally unsatisfactory. Intravenous steroids have been shown to be effective for postsurgical pain management after certain surgeries. The aim of this meta-analysis with trial sequential analysis (TSA) was to evaluate the analgesic effect of steroids in patients administered with caudal anesthesia.METHODSThis study was a systematic review and meta-analysis. A search of published literature was conducted in the MEDLINE, EMBASE, Web of Science, and Cochrane Central Register of Controlled Trials databases and in trial registration sites. Randomized controlled trials that compared intravenous steroids with a placebo in pediatric patients who had received caudal anesthesia for surgery were included in the study. The primary outcomes from the present meta-analysis were the analgesic duration and the number of patients who required rescue analgesics. The analgesic duration and incidence of rescue use were summarized using mean difference or risk ratio with a 97.5% confidence interval (CI), respectively. If the 97.5% CI of the mean difference or risk ratio included a value of 0 or 1, respectively, we considered the difference not to be significant. We used the random effects model to combine the results. Heterogeneity was quantified with the I statistic. The quality of the trials was evaluated using the Cochrane methodology. Moreover, a TSA with a risk of type 1 error of 2.5% and power of 90% was performed. We established the minimum clinically meaningful difference of analgesic duration as 3 hours. The target sample size for meta-analysis was also calculated in the TSA. We also assessed

adverse events.RESULTSSix trials with 424 patients were included; 211 patients received intravenous steroids. All trials compared dexamethasone of at least 0.5 mg/kg dose with a placebo. Dexamethasone prolonged the duration of caudal analgesia (mean difference, 244 minutes; 97.5% CI, 188-300). Heterogeneity was considerable with an I value of 94.8%. Quality of evidence was very low. The TSA suggested that only 17.0% of the target sample size had been reached, but the cumulative Z score crossed the trial sequential monitoring boundary to indicate a benefit. Rescue use was reported in 4 studies with 260 patients. Rescue use was not significantly reduced in the dexamethasone group (risk ratio, 0.53; 97.5% CI, 0.09-3.30; I, 98.7%). No increase in adverse events was reported.CONCLUSIONSIntravenous dexamethasone prolongs the analgesic duration of caudal anesthesia. Trials to investigate the effectiveness of a lower dose of the dexamethasone in prolonging analgesic effects would be of interest. Further trials with a low risk of bias are necessary.

Neuraxial and Combined Neuraxial/General Anesthesia Compared to General Anesthesia for Major Truncal and Lower Limb Surgery: A Systematic Review and Meta-analysis.

Author(s): Smith, Lauren M; Cozowicz, Crispiana; Uda, Yoshiaki; Memtsoudis, Stavros G;

Source: Anesthesia and analgesia; Dec 2017; vol. 125 (no. 6); p. 1931-1945

Publication Type(s): Meta-analysis Comparative Study Journal Article Review

Available at Anesthesia and analgesia - from Ovid (Journals @ Ovid)

Abstract: Neuraxial anesthesia may improve perioperative outcomes when compared to general anesthesia; however, this is controversial. We performed a systematic review and meta-analysis using randomized controlled trials and population-based observational studies identified in MEDLINE, PubMed, and EMBASE from 2010 to May 31, 2016. Studies were included for adult patients undergoing major surgery of the trunk and lower extremity that reported: 30-day mortality (primary outcome), cardiopulmonary morbidity, surgical site infection, thromboembolic events, blood transfusion, and resource use. Perioperative outcomes were compared with general anesthesia for the following subgroups: combined neuraxial-general anesthesia and neuraxial anesthesia alone. Odds ratios (ORs) and 99% confidence intervals (CIs) were calculated to identify the impact of anesthetic technique on outcomes. Twenty-seven observational studies and 11 randomized control trials were identified. This analysis comprises 1,082,965 records from observational studies or databases and 1134 patients from randomized controlled trials. There was no difference in 30-day mortality identified when combined neuraxial-general anesthesia was compared with general anesthesia (OR 0.88; 99% CI, 0.77-1.01), or when neuraxial anesthesia was compared with general anesthesia (OR 0.98; 99% CI, 0.92-1.04). When combined neuraxial-general anesthesia was compared with general anesthesia, combined neuraxial-general anesthesia was associated with a reduced odds of pulmonary complication (OR 0.84; 99% CI, 0.79-0.88), surgical site infection (OR 0.93; 99% CI, 0.88-0.98), blood transfusion (OR 0.90; 99% CI, 0.87-0.93), thromboembolic events (OR 0.84; 99% CI, 0.73-0.98), length of stay (mean difference -0.16 days; 99% CI, -0.17 to -0.15), and intensive care unit admission (OR 0.77; 99% CI, 0.73-0.81). For the combined neuraxial-general anesthesia subgroup, there were increased odds of myocardial infarction (OR 1.18; 99% CI, 1.01-1.37). There was no difference identified in the odds of pneumonia (OR 0.94; 99% CI, 0.87-1.02) or cardiac complications (OR 1.04; 99% CI, 1.00-1.09) for the combined neuraxial-general anesthesia subgroup. When neuraxial anesthesia was compared to general anesthesia, there was a decreased odds of any pulmonary complication (OR 0.38; 99% CI, 0.36-0.40), surgical site infection (OR 0.76; 99% CI, 0.71-0.82), blood transfusion (OR 0.85; 99% CI, 0.82-0.88), thromboembolic events (OR 0.79; 99% CI, 0.68-0.91), length of stay (mean difference -0.29 days; 99% CI, -0.29 to -0.28), and intensive care unit admission (OR 0.50; 99% CI, 0.48-0.53). There was no difference in the odds of cardiac complications (OR 0.99; 99% CI, 0.94-1.03), myocardial infarction (OR 0.91; 99% CI, 0.81-1.02), or pneumonia (OR 0.92; 99% CI, 0.84-1.01). Randomized control trials revealed no difference in requirement for blood transfusion (RR 1.05; 99% CI, 0.65-1.71) and a

decreased length of stay (mean difference -0.15 days; 99% CI, -0.27 to -0.04). Neuraxial anesthesia when combined with general anesthesia or when used alone was not associated with decreased 30-day mortality. Neuraxial anesthesia may improve pulmonary outcomes and reduce resource use when compared with general anesthesia. However, because observational studies were included in this analysis, there is a risk of residual confounding and therefore these results should be interpreted with caution.

Comparison of nalbuphine and sufentanil for colonoscopy: A randomized controlled trial

Author(s): Deng C.; Wang X.; Zhu Q.; Kang Y.; Wang H.; Yang J.

Source: PLoS ONE; Dec 2017; vol. 12 (no. 12)

Publication Type(s): Article

Abstract: Objectives Nalbuphine is as effective as morphine as a perioperative analgesic but has not been compared directly with sufentanil in clinical trials. The aims of this study were to compare the efficacy and safety of nalbuphine with that of sufentanil in patients undergoing colonoscopy and to determine the optimal doses of nalbuphine in this indication. Methods Two hundred and forty consecutive eligible patients aged 18-65 years with an American Society of Anesthesiologists classification of I-II and scheduled for colonoscopy were randomly allocated to receive sufentanil 0.1 mug/kg (group S), nalbuphine 0.1 mg/kg (group N1), nalbuphine 0.15 mg/kg (group N2), or nalbuphine 0.2 mg/kg (group N3). Baseline vital signs were recorded before the procedure. The four groups were monitored for propofol sedation using the bispectral index, and pain relief was assessed using the Visual Analog Scale and the modified Behavioral Pain Scale for non-intubated patients. The incidences of respiratory depression during endoscopy, nausea, vomiting, drowsiness, and abdominal distention were recorded in the post anesthesia care unit and in the first and second 24-hour periods after colonoscopy. Results There was no significant difference in analgesia between the sufentanil group and the nalbuphine groups ($p>0.05$). Respiratory depression was significantly more common in group S than in groups N1 and N2 ($p<0.05$). The incidence of nausea was significantly higher in the nalbuphine groups than in the sufentanil group in the first 24 hours after colonoscopy ($p<0.05$). Conclusions Nalbuphine can be considered as a reasonable alternative to sufentanil in patients undergoing colonoscopy. Doses in the range of 0.1+/-0.2 mg/kg are recommended. The decreased risks of respiratory depression and apnea make nalbuphine suitable for patients with respiratory problems.

Relationship between general anesthesia and Alzheimer disease: A protocol for a systematic review and meta-analysis

Author(s): Choi G.J.; Kang H.; Baek C.W.; Jung Y.H.; Woo Y.C.; Kim J.W.

Source: Medicine (United States); Dec 2017; vol. 96 (no. 51)

Publication Type(s): Review

Abstract: Background: Alzheimer disease (AD) entails a long-term progressive decline in the cognitive ability to think and remember, and it has become a major concern for patients receiving surgery and anesthesia. However, studies investigating the relationship between general anesthesia and AD have yielded inconsistent results. Therefore, we plan to perform a systematic review and meta-analysis to determine the relationship between general anesthesia and AD, and to verify whether general anesthesia is an independent risk factor for AD. Methods: A systematic and comprehensive search will be performed using MEDLINE, EMBASE, and Google scholar from their inception to August 2017. Peer-reviewed cohort and case-control studies including nested case-control studies reporting the relationship between general anesthesia and AD will be eligible for inclusion. The quality of included

studies will be assessed using the Newcastle-Ottawa scale. Heterogeneity of estimates across studies as well as publication bias will be assessed. This systematic review and meta-analysis will be performed according to the Meta-analysis of Observational Studies in Epidemiology (MOOSE) guidelines and reported according to the Preferred Reporting Items for Systematic reviews and Meta-Analysis (PRISMA) guidelines. All statistical analyses will be conducted using the Stata SE version 15.0. Results: The results of this systematic review and meta-analysis will be published in a peer-reviewed journal. Conclusion: Our study will provide the evidence for the relationship between general anesthesia and dementia. The review will benefit patients and anesthesiologists, surgeons, and policymakers. Ethics and dissemination: Ethical approval and informed consent are not required, as the study will be a literature review and will not involve direct contact with patients or alterations to patient care. Trial registration: The protocol for this review has been registered in the PROSPERO network (registration number: CRD42017073790). Copyright © 2017 the Author(s).

Fascia iliaca compartment block versus no block for pain control after lower limb surgery: A meta-analysis

Author(s): Yang L.; Li M.; Chen C.; Shen J.; Bu X.

Source: Journal of Pain Research; Dec 2017; vol. 10 ; p. 2833-2841

Publication Type(s): Article

Abstract: Background: The analgesic effect of fascia iliaca compartment block (FICB) versus no block (NB) after lower limb surgery (LLS) is still controversial, so we performed this meta-analysis. Materials and methods: By searching the PubMed, Embase and the Cochrane Library (last update by July 20, 2017), randomized controlled trials comparing the analgesic effect of FICB versus NB in patients receiving LLS were identified. The primary outcome was the pain scores at 4, 12, and 24 h after LLS. The dosage of morphine at 24 h was also collected. The side effect of anesthesia was assessed according to the occurrence rate of postoperative nausea and vomiting. Results: Data from 7 clinical trials that included 508 patients were summarized. The results showed that patients receiving FICB had lower pain scores at 4 h (mean difference [MD]=-1.17; 95% CI=-2.30 to -0.05; P=0.041), 12 h (MD=-0.41; 95% CI=-0.76 to -0.05; P=0.026) and 24 h (MD=-0.96; 95% CI=-1.77 to -0.15; P=0.020) after LLS. Besides, FICB could reduce the dosage of morphine at 24 h (MD=-2.06; 95% CI=-3.82 to -0.30; P=0.022) and the incidence of postoperative nausea and vomiting (relative risk rate=0.44, 95% CI=0.24-0.80, P=0.008). Conclusion: Compared with NB, FICB is an effective and safe method for alleviating the pain after LLS. More high-quality randomized controlled trials are needed to confirm this finding. Copyright © 2017 Yang et al.

Comparison of dexmedetomidine and fentanyl as local anesthetic adjuvants in spinal anesthesia: A systematic review and meta-analysis of randomized controlled trials

Author(s): Sun S.J.; Bao N.R.; Chen Y.; Wang J.; Wang J.M.

Source: Drug Design, Development and Therapy; Dec 2017; vol. 11 ; p. 3413-3424

Publication Type(s): Review

Available at Drug Design, Development and Therapy - from EBSCO (MEDLINE Complete)

Abstract: Purpose: To compare the effects of dexmedetomidine (Dex) and fentanyl as adjuvants to local anesthetics in spinal anesthesia. Methods: Two researchers independently searched the PUBMED, EMBASE, Cochrane library, and CBM for randomized controlled trials comparing the effects of Dex and fentanyl as adjuvants to local anesthetics for intrathecal injection. Results: A total of 639 patients from nine studies were included in this meta-analysis. The results showed that Dex resulted in statistically significant longer duration of stable sensory block (mean difference [MD] =27.12; 95% confidence interval [CI] [9.89, 44.34], P<0.01, I2=97%), sensory block (standardized mean difference [SMD] =3.81; 95% CI [2.35, 5.27], P<0.01, I2=97%), motor block (SMD =3.64; 95% CI

[2.19, 5.08], P<0.01, I2=97%), and pain free period (SMD =2.98; 95% CI [1.69, 4.27], P<0.01, I2=96%); reducing the incidence of pruritus (relative risk [RR] =0.15; 95% CI [0.06, 0.39], P<0.01, I2=0%) compared with fentanyl. However, the onset of sensory and motor block, the time to peak sensory level, and the incidence of hypotension and bradycardia, and the side effects (nausea, vomiting, shivering and respiratory depression) were not significantly different between Dex and fentanyl. Conclusion: Compared to fentanyl, Dex as local anesthetics adjuvant in spinal anesthesia prolonged the duration of spinal anesthesia, improved postoperative analgesia, reduced the incidence of pruritus, and did not increase the incidence of hypotension and bradycardia.

Regional anesthesia for thoracotomy pain in newborns and infants- a systematic review

Author(s): Jayaram K.; Durga P.

Source: Trends in Anaesthesia and Critical Care; Dec 2017; vol. 17 ; p. 11-16

Publication Type(s): Review

Abstract: Regional techniques at thoracic level for thoracotomy surgeries in infants are gaining wider acceptance. The principal focus is on preserving physiological stability and reducing postoperative pain and stress in these smaller individuals as they are more susceptible to impairment in pulmonary function. Knowledge about the drug pharmacokinetics, dynamics in this age group along with availablity of the adequate size equipment has revolutionised anesthesia in infants. This review focusses on the various techniques of regional anesthesia for thoracotomy in neonates and infants along with local anesthetics. Copyright © 2017

Clinical trial registry use in anaesthesiology systematic reviews

Author(s): Umberham B.A.; Detweiler B.N.; Sims M.T.; Vassar M.

Source: European Journal of Anaesthesiology; Dec 2017; vol. 34 (no. 12); p. 797-807

Publication Type(s): Article

Abstract:BACKGROUND Publication bias within systematic reviews may result in incorrect conclusions leading to inappropriate clinical decisions and a decreased quality of patient care. Searching clinical trial registries for unpublished studies is one possible solution to minimise publication bias. OBJECTIVES To examine rates of clinical trial registry searches in systematic reviews published in respected anaesthesiology journals and whether these searches found trials (or data) eligible for inclusion; to compare rates of registry searches between published reviews and similar reviews within the Cochrane Anaesthesia, Critical and Emergency Care Group; to conduct trial registry searches for a subset of reviews, determining whether eligible studies were overlooked; to investigate whether reporting of results in completed anaesthesia trials on ClinicalTrials.gov followed guidelines. DESIGN A cross-sectional study of systematic reviews published in 10 anaesthesiology journals and the Cochrane Library. SETTING AND PARTICIPANTS PubMed and the Cochrane Library were searched for systematic reviews or meta-Analyses. MAIN OUTCOME MEASURES The primary outcome was the number of systematic reviews that searched clinical trial registries for unpublished trials. Secondary outcomes included the number of registered trials in the ClinicalTrial.gov registry and the number of trials reporting trial results which were available on the ClinicalTrials.gov database and which should have been considered in a systematic review. RESULTS The PubMed search yielded 507 records, and 415 remained after exclusions. Of these, 49 (11.8%) included a search of clinical trial registries. In total, 12 systematic reviews reported finding unpublished data but only five incorporated the data into their analyses. Of the Cochrane reviews, 58.9% (43/73) reported registry searches. Among a sample of 30 systematic reviews that omitted registry searches, we found many studies within the registries that were probably eligible to be included in the systematic reviews. For completed trials within the ClinicalTrials.gov database, only

15.4% reported results. CONCLUSION The majority of systematic reviews in anaesthesiology did not include data from clinical trial registries. Exclusion of statistically nonsignificant data may lead to a biased interpretation of the data and hence inappropriate clinical interventions. TRIAL REGISTRATION Registered in University hospital Medical Information Network (UMIN) Clinical Trials Registry (UMIN000021932).

Ultrasound-Guided Regional Anesthesia Simulation Training: A Systematic Review.

Author(s): Xiao Xu Chen; Trivedi, Vatsal; AlSaflan, AbdulHadi A.; Todd, Suzanne Clare;

Source: Regional Anesthesia & Pain Medicine; Nov 2017; vol. 42 (no. 6); p. 741-750

Publication Type(s): Academic Journal

Abstract: Background and Objectives: Ultrasound-guided regional anesthesia (UGRA) has become the criterion standard of regional anesthesia practice. Ultrasound-guided regional anesthesia teaching programs often use simulation, and guidelines have been published to help guide URGA education. This systematic review aimed to examine the effectiveness of simulation-based education for the acquisition and maintenance of competence in UGRA.Methods: Studies identified in MEDLINE, EMBASE, CINAHL, Cochrane Central Register of Controlled Trials, and ERIC were included if they assessed simulation-based UGRA teaching with outcomes measured at Kirkpatrick level 2 (knowledge and skills), 3 (transfer of learning to the workplace), or 4 (patient outcomes). Two authors independently reviewed all identified references for eligibility, abstracted data, and appraised quality.Results: After screening 176 citations and 45 full-text articles, 12 studies were included. Simulation-enhanced training improved knowledge acquisition (Kirkpatrick level 2) when compared with nonsimulation training. Seven studies measuring skill acquisition (Kirkpatrick level 2) found that simulation-enhanced UGRA training was significantly more effective than alternative teaching methods or no intervention. One study measuring transfer of learning into the clinical setting (Kirkpatrick level 3) found no difference between simulation-enhanced UGRA training and non-simulation-based training. However, this study was discontinued early because of technical challenges. Two studies examined patient outcomes (Kirkpatrick level 4), and one of these found that simulation-based UGRA training improved patient outcomes compared with didactic teaching.Conclusions: Ultrasound-guided regional anesthesia knowledge and skills significantly improved with simulation training. The acquired UGRA skills may be transferred to the clinical setting; however, further studies are required to confirm these changes translate to improved patient outcomes.

Impact of Regional Anesthesia on Recurrence, Metastasis, and Immune Response in Breast Cancer Surgery: A Systematic Review of the Literature.

Author(s): Pérez-González, Oscar; Cuéllar-Guzmán, Luis F.; Soliz, José; Cata, Juan P.

Source: Regional Anesthesia & Pain Medicine; Nov 2017; vol. 42 (no. 6); p. 751-756

Publication Type(s): Academic Journal

Abstract: Background and Objectives: The perioperative period is critical in the long-term prognosis of breast cancer patients. The use of regional anesthesia, such as paravertebral block (PVB), could be associated with improvements in long-term survival after breast cancer surgery by modulating the inflammatory and immune response associated with the surgical trauma, reducing opioid and general anesthetic consumption, and promoting cancer cells death by a direct effect of local anesthetics.Methods: A systematic literature search was conducted for studies of patients who received PVB for breast cancer surgery. The Jadad score and Ottawa-Newcastle scale were used to assess the methodological quality of randomized controlled trial and observational retrospective studies, respectively. Only high-quality studies were considered for meta-analysis. The selected

studies were divided into 3 groups to determine the impact of PVB on (a) recurrence and survival, (b) humoral response, and (c) cellular immune response.Results: We identified 467 relevant studies; 121 of them underwent title and abstract review, 107 were excluded, and 15 studies were selected for full text reading and quality assessment. A meta-analysis was not conducted because of low-quality studies and lack of uniform definition among primary outcomes. Thus, a systematic review of the current evidence was performed.Conclusions: Our study indicates that there are no data to support or refute the use of PVB for reduction of cancer recurrence or improvement in cancer-related survival. However, PVB use is associated with lower levels of inflammation and a better immune response in comparison with general anesthesia and opioid-based analgesia.

Anaesthetic efficacy of 4% articaine compared with 2% mepivacaine: a randomized, double-blind, crossover clinical trial.

Author(s): Bortoluzzi, M C; de Camargo Smolarek, P; Cecato, R; Pochapski, M T; Chibinski, A C R

Source: International journal of oral and maxillofacial surgery; Nov 2017

Publication Type(s): Journal Article

Abstract: The aim of this study was to evaluate the clinical efficacy of 4% articaine (Ar4) compared to 2% mepivacaine (Me2), both in combination with 1:100,000 epinephrine, in a unique soft tissue model. This was a randomized, double-blind, crossover clinical trial. The anaesthetic was applied to the lower lip using a computerized local delivery system. The following were evaluated: blood flow, thermal sensation, pressure and proprioception, extent of anaesthesia, gradual elimination, and the final duration of the effect of the anaesthesia. Seventy-two volunteers completed all parts of the study. Significant differences, which indicated better effectiveness of Me2 compared to Ar4, were observed in the following tests: reduction in blood flow (larger in the Me2 group); anaesthetized area at 30min (larger in the Me2 group); pressure tests; temperature tests after 20min; fine and discriminatory proprioception tests after 20min. The volunteers' perception of anaesthesia at 30, 40, 50, and 60min was superior for Me2 at all recorded time points. The duration of anaesthesia was also superior for Me2. The overall performance of Me2 was superior to Ar4, implying that Me2 provides a more effective anaesthesia in terms of depth, extent, and duration.

Evidence Basis for Regional Anesthesia in Ambulatory Anterior Cruciate Ligament Reconstruction: Part III: Local Instillation Analgesia-A Systematic Review and Meta-Analysis.

Author(s): Yung, Eric M; Brull, Richard; Albrecht, Eric; Joshi, Girish P; Abdallah, Faraj W

Source: Anesthesia and analgesia; Nov 2017

Publication Type(s): Journal Article

Available at Anesthesia and analgesia - from Ovid (Journals @ Ovid)

Abstract:BACKGROUNDLocal infiltration analgesia offers effective postoperative analgesia after knee arthroplasty, but the role of its counterpart, local instillation analgesia (LIA), in anterior cruciate ligament reconstruction (ACLR) is unclear. This systematic review and meta-analysis evaluates the analgesic benefits of LIA for outpatient ACLR.METHODSWe sought randomized controlled trials investigating the analgesic effects of LIA versus control in adults having outpatient ACLR and receiving multimodal analgesia (excluding nerve blocks, which are examined in parts I and II of this project). Cumulative postoperative analgesic consumption at 24 hours was designated as a primary outcome. Analgesic consumption during postanesthesia care unit stay, proportion of patients requiring analgesic supplementation, time-to-first analgesic request, rest pain scores during the first 48 hours, hospital length of stay, and incidence of opioid-related side effects were analyzed as secondary outcomes and pooled using random effects modeling.RESULTSEleven randomized controlled trials (515 patients) were included. Analgesic consumption was selected as the primary outcome in 4 trials (36%). Compared to control, LIA reduced the 24-hour morphine consumption by

a weighted mean difference (95% confidence interval) of -18.0 mg (-33.4 to -2.6) (P = .02). LIA reduced postanesthesia care unit morphine consumption by -55.9 mg (-88.4 to -23.4) (P < .05) and decreased the odds (odds ratio [95% confidence interval]) of analgesic supplementation during the first 24 hours by 0.4 (0.2-0.8) (P = .004). LIA also improved pain scores during the 0-24-hour interval, most notably at 4 hours (-1.6 [-2.2 to -1.0) (P < .00001).CONCLUSIONSAdministering LIA for outpatient ACLR improves postoperative analgesia by decreasing opioid consumption and improving pain control up to 24 hours, with minimal complications. These findings encourage integrating LIA into the care standard for ACLR. Questions regarding the ideal LIA components, location, and role in the setting of hamstring grafts require further research.

Pediatric premedication: a double-blind randomized trial of dexmedetomidine or ketamine alone versus a combination of dexmedetomidine and ketamine.

Author(s): Qiao, Hui; Xie, Zhi; Jia, Jie

Source: BMC anesthesiology; Nov 2017; vol. 17 (no. 1); p. 158

Publication Type(s): Journal Article

PubMedID: 29187151

Available at BMC anesthesiology - from BioMed Central

Abstract:BACKGROUNDPreoperative anxiety is common in pediatric patients. When dexmedetomidine is used alone for sedation as premedication, children tend to awaken when separated from their parents, and body movements occur during invasive procedures. We tested the hypothesis that the combination of dexmedetomidine and ketamine may be a useful premedication to alleviate preoperative anxiety and improve cooperation during intravenous cannulation in pediatric patients, while producing minimal adverse events.METHODSA total of 135 children, aged 2-5 years and American Society of Anesthesiologists status I-II, scheduled for eye surgery were randomly allocated to receive intranasal dexmedetomidine 2.5 μg/kg (group D), oral ketamine 3 mg/kg and intranasal dexmedetomidine 2 μg/kg (group DK), or oral ketamine 6 mg/kg (group K) 30 min before surgery. Sedation state was evaluated every 10 min after premedication and emotional state was assessed during separation from their parents and peripheral intravenous cannulation. Adverse events were recorded for 24 h postoperatively. The primary endpoint was the rate of successful intravenous cannulation.RESULTSThe rate of successful venous cannulation was 47% with dexmedetomidine alone, 68% with ketamine alone, and 80% with combined premedication (P = 0.006). The rate of satisfactory separation from parents was not different among groups. The incidence of adverse events was higher in group K compared with the other two groups (postoperative vomiting, P = 0.0041; respiratory-related complications during the perioperative period, P = 0.0032; and postoperative psychological/psychiatric adverse events, P = 0.0152).CONCLUSIONThe combination of intranasal dexmedetomidine 2 μg/kg and oral ketamine 3 mg/kg produces satisfactory separation from parents and more successful venous cannulation, allowing children to smoothly accept induction of general anesthesia.TRIAL REGISTRATIONChinese Clinical Trial Register (Unique identifier: ChiCTR-TRC-14004475 , Date of registration: 2 April 2014).

The optimum sevoflurane concentration for supraglottic airway device Blockbuster™ insertion with spontaneous breathing in obese patients: a prospective observational study.

Author(s): Wang, Haixia; Gao, Xue; Wei, Wei; Miao, Huihui; Meng, Hua; Tian, Ming

Source: BMC anesthesiology; Nov 2017; vol. 17 (no. 1); p. 156

Publication Type(s): Journal Article

Available at BMC anesthesiology - from BioMed Central

Abstract:BACKGROUNDAirway management of the obese patient presenting for surgery is more likely to be a challenging problem. Supraglottic airway device has been adopted as a bridge to connect ventilation and tracheal intubation in obese patients who would be suffered with difficult intubation. The optimum sevoflurane concentration for supraglottic airway device insertion allowing spontaneous breathing in 50% of obese patients (ED50) is not known. The purpose of this study was to determine the ED50 of sevoflurane for supraglottic airway device Blockbuster™ insertion with spontaneous breathing in obese patients requiring general anesthesia.METHODSThirty elective obese patients (body mass index 30-50 kg/m2) undergoing bariatric surgery were recruited in this study. The predetermined target sevoflurane concentration (initiating at 2.5% with 0.5% as a step size) was sustained for >5 min using a modified Dixon's up-and-down method, and then the supraglottic airway device Blockbuster™ was inserted. The patient's response to supraglottic airway device insertion was classified as either 'movement' or 'no-movement'. The ED50 of sevoflurane were determined by calculating the midpoint concentration of crossover point from 'movement' or 'no-movement' response.RESULTSThe ED50 of sevoflurane for supraglottic airway device Blockbuster™ insertion in obese patients calculated using up-and-down method were 2.50 ± 0.60%. The ED50 and ED95 (95% confidence interval) obtained by probit regression analysis were 2.35 (1.28-3.42) % and 4.03 (3.16-17.83) % for supraglottic airway device Blockbuster™ insertion, respectively.CONCLUSIONWe conclude that the optimum end-tidal sevoflurane concentration required for the supraglottic airway device Blockbuster™ insertion allowing spontaneous breathing in 50% of obese patients (ED50) is 2.5 ± 0.6%.TRIAL REGISTRATIONChinese Clinical Trial Registry, ChiCTR-IPR-16009071 , Registered on 24 August 2016.

Comparison of Two Methods: Spinal Anesthesia and Ischiorectal Block on Post Hemorrhoidectomy Pain and Hospital Stay: A Randomized Control Trial.

Author(s): Nadri, Sedigheh; Mahmoudvand, Hormoz; Rokrok, Shirin; Tarrahi, Mohammad Javad

Source: Journal of investigative surgery : the official journal of the Academy of Surgical Research; Nov 2017 ; p. 1-5

Publication Type(s): Journal Article

Abstract:OBJECTIVEHemorrhoidectomy is one of the most common hemorrhoid surgery. Many areas are innervated by nerves, and this makes the surgery to be very painful. Various anesthetic methods have been proposed, and the number of investigations and procedures demonstrated the absence of a reliable method for reducing pain. This study compares the cavity ischiorectal block with spinal anesthesia in reducing postoperative pain, analgesic consumption, and hospital stay.RESEARCH DESIGNThis study is a randomized control trial carried out on seventy patients sampled. Thirty-five (35) among them were placed in spinal anesthesia group, and the other 35 were placed in the ischiorectal block group. According to the study, questionnaire was designed in such a way that postoperative variables such as postoperative pain, analgesic consumption, changes in blood pressure, heart rate and hospital stay in both groups were evaluated and compared.CLINICAL TRIAL REGISTRATIONIRCT2015111616516N3 (http://en.search.irct.ir/search?query=IRCT2015111616516N3) Results: In this study, the pain scores on Visual Analogue Scale (VAS) at 0, 6, 12, and 24 hr for spinal anesthesia group after surgery were 0, 3.08 ± 0.78, 2.05 ± 1.02, 1.11 ± 0.83, respectively ($p < 0.05$). That of ischiorectal blocks were 0.98 ± 0.25, 1.57 ± 0.81, 0.91 ± 0.91, and 0.63 ± 0.31 respectively, which indicated lesser pain after surgery in the ischiorectal block at 6, 12, and 24 hr. In this study, out of the 35 patients that underwent spinal anesthesia, 28 patients (80%) were hospitalized in the first 6 hr, 13 patients (37.1%) in the second 6 hr, 3 patients (8.6%) in the second 12 hr after surgery. For patients under the ischiorectal block, the number of patients hospitalized were 13 patients (37.1%), in the first 6 hr, 4 patients (11.4%) in the second 6 hr, and 1 (2.9%) were hospitalized in the second 12 hr after surgery ($p < 0.05$).CONCLUSIONIschiorectal blocks causes less pain, require fewer painkillers, and reduces the hospital stay after surgery than spinal anesthesia.

Dexmedetomidine versus propofol on the sedation of pediatric patients during magnetic resonance imaging (MRI) scanning: a meta-analysis of current studies.

Author(s): Zhou, Qiang; Shen, Lingli; Zhang, Xinxian; Li, Jiong; Tang, Yong

Source: Oncotarget; Nov 2017; vol. 8 (no. 60); p. 102468-102473

Publication Type(s): Journal Article

Available at Oncotarget - from Europe PubMed Central - Open Access

Abstract: Magnetic resonance imaging (MRI) is a widely applied diagnostic approach for detection of pediatric diseases. Sedatives are commonly used to acquire the accurate MRI images. Dexmedetomidine and propofol serve as sole or combined sedatives in pediatric MRI scanning. This meta-analysis aimed to compare the efficacy of dexmedetomidine and propofol in children ubdergoing MRI. Pubmed, Cochrane Library and Web of Science were searched up to June, 2017. Onset of sedation time, recovery time, sedation time, MRI time, MRI quality and emergence delirium were analyzed. 6 studies with 368 subjects were enrolled in this meta-analysis. The pooling data showed that propofol had a shorter onset of sedation time (WMD: 6.05, 95% CI: 3.12 - 8.98, P < 0.0001) and recovery time (WMD: 1.01, 95% CI: 0.36-1.67, P < 0.001) than dexmedetomidine. But for sedation time and MRI scanning time, there were no differences between the two groups (sedation time: P = 0.29; MRI scanning time: P = 0.50). There were no significance between dexmedetomidine and propofol on MRI quality (MRI quality 1: P = 1.00; MRI quality 2: P = 0.68; MRI quality 3: P = 0.45). Two studies using Pediatric Anesthesia Emergence Delirium (PAED) to assess emergence delirium 10 minutes after awakening showed that propofol had a lower PAED than dexmedetomidine (WMD: 2.57, 95% CI: 0.15-5.00, P = 0.04). Thus, propofol should be encouraged in pediatric patients undergoing MRI for its better sedative effects and a low incidence of emergence delirium.

A single dose of dezocine suppresses emergence agitation in preschool children anesthetized with sevoflurane-remifentanil.

Author(s): An, Li-Jun; Zhang, Yang; Su, Zheng; Zhang, Xian-Long; Liu, Hai-Lin; Zhang, Zhi-Jie;

Source: BMC anesthesiology; Nov 2017; vol. 17 (no. 1); p. 154

Publication Type(s): Journal Article

Available at BMC anesthesiology - from BioMed Central

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Abstract:BACKGROUNDEmergence agitation (EA) is a common phenomenon in preschool children during emergence from general anesthesia. This study evaluated the safety and efficacy of dezocine for emergence agitation in preschool children anesthetized with sevoflurane-remifentanil.METHODSA total of 100 preschool children, scheduled for elective laparoscopic repair of an inguinal hernia by high ligation of the hernia sac under sevoflurane-remifentanil anesthesia were randomized into two groups: Group C (n = 50) received Ringer's lactate 10 mL and Group D received Ringer's lactate 10 mL containing dezocine 0.1 mg/kg, postoperatively.RESULTSIncidence of EA, defined as a score ≥ 3 on Aono's four point scale or Pediatric Anesthesia Emergence Delirium (PAED) score ≥ 10 in the PACU (10% vs. 76%) and the percentage of patients with severe EA (PAED score ≥ 13) (12% vs. 76%) were significantly lower in Group D compared to Group C (P < 0.05). Mean Children and Infants Postoperative Pain Scale (CHIPPS) score was significantly lower in Group D compared to Group C (1.2 ± 0.5 vs. 5.2 ± 0.6; P < 0.05). Patients need for fentanyl (18% vs. 4%) or propofol rescue (20% vs. 0) was significantly greater in Group C compared to Group D. No significant differences in other relative aspects after surgery between groups.CONCLUSIONAdministration of dezocine 0.1 mg/kg decreased the incidence and severity of EA in preschool children that had undergone laparoscopic repair of an inguinal hernia by high ligation of the hernia sac under sevoflurane-remifentanil anesthesia.TRIAL REGISTRATIONA single dose of dezocine suppresses emergence agitation in preschool children anesthetized with sevoflurane-remifentanil effectively: A

double-blind, prospective, randomized, controlled study, Chinese Clinical Trial Registry (ID: ChiCTR-IOR-16010033), retrospectively registered on November 21, 2016.

Nitrous oxide added at the end of isoflurane anesthesia hastens early recovery without increasing the risk for postoperative nausea and vomiting: a randomized clinical trial.

Author(s): Mraovic, Boris; Simurina, Tatjana; Gan, Tong J

Source: Canadian journal of anaesthesia = Journal canadien d'anesthesie; Nov 2017

Publication Type(s): Journal Article

Abstract:BACKGROUNDNitrous oxide (N2O) has been reported to increase the risk of postoperative nausea and vomiting (PONV) in a dose-dependent manner. We investigated the effect of adding N2O at the end of isoflurane inhalational anesthesia on the recovery and incidence of PONV. Our hypothesis was that N2O would reduce the time to early recovery without increasing the incidence of PONV.METHODSAfter obtaining ethics committee approval and written informed consent, 100 women at American Society of Anesthesiologists physical status I-III and scheduled for laparoscopic-assisted vaginal hysterectomy were randomized into two groups (G) according to the carrier gas: GO2 (air in 30% oxygen) and GN2O (the same mixture until the last 30 min of surgery, when 70% N2O in 30% oxygen was used). No PONV prophylaxis was given. Anesthesia was induced with thiopental 5 mg·kg-1, vecuronium 0.1 mg·kg-1, and fentanyl 1-2 μg·kg-1 iv and maintained with isoflurane. Indicators of early recovery (time to extubation, eye opening, following commands, orientation) were assessed by an anesthesiologist unaware of the group assignment. The incidence and severity of PONV was measured at two and 24 hr postoperatively.RESULTSAltogether, 82 participants completed the study (42 in GO2, 40 in GN2O) and were analyzed. The mean (SD) time of N2O administration in GN2O patients was 27.1 (10.1) min. The mean (SD) time to extubation was faster in GN2O patients [5.4 (2.9) min] than in GO2 patients [7.5 (3.7) min] (mean difference, 2.0 min; 95% confidence interval [CI], 0.6 to 3.4, P = 0.009). The ability to open eyes, follow commands, and being oriented were all faster in GN2O patients than in GO2 patients (differences of 3.9 min, 95% CI, 1.6 to 6.1, P = 0.001; 3.4 min, 95% CI, 1.0 to 5.7, P = 0.006; 3.8 min, 95% CI, 0.9 to 6.7, P = 0.010, respectively). The incidence of PONV was not different between the groups, but the rescue antiemetic was required less often in the GN2O patients (mean difference in metoclopramide dose between the GN2O and GO2 groups, 5.1 mg; 95% CI, 0.8 to 9.4, P = 0.019).CONCLUSIONSAdding N2O during the last 30 min of an isoflurane-based inhalational anesthetic reduced the time to extubation, eye opening, and orientation.

Preventing shivering with adjuvant low dose intrathecal meperidine: A meta-analysis of randomized controlled trials with trial sequential analysis.

Author(s): Lin, Yu-Cih; Chen, Chien-Yu; Liao, Yuan-Mei; Liao, Alan Hsi-Wen; Lin, Pi-Chu

Source: Scientific reports; Nov 2017; vol. 7 (no. 1); p. 15323

Publication Type(s): Journal Article

Available at Scientific reports - from Europe PubMed Central - Open Access

Abstract: The aim of this systematic review and meta-analysis is to evaluate the pros and cons of adjuvant low dose intrathecal meperidine for spinal anaesthesia. We searched electronic databases for randomized controlled trials using trial sequential analysis (TSA) to evaluate the incidence of reduced rescue analgesics, shivering, pruritus, nausea and vomiting when applying adjuvant intrathecal meperidine. Twenty-eight trials with 2216 patients were included. Adjuvant intrathecal meperidine, 0.05-0.5 mg kg-1, significantly reduced incidence of shivering (relative risk, RR, 0.31, 95% confidence interval, CI, 0.24 to 0.40; TSA-adjusted RR, 0.32, 95% CI, 0.25 to 0.41). Intrathecal meperidine also effectively reduced need for intraoperative rescue analgesics (RR, 0.27, 95% CI, 0.12 to 0.64; TSA-adjusted RR, 0.27, 95% CI, 0.08 to 0.91) and the incidence of pruritus was unaffected

(RR, 2.31, 95% CI, 0.94 to 5.70; TSA-adjusted RR, 1.42, 95% CI, 0.87 to 2.34). However, nausea and vomiting increased (RR, 1.84, 95% CI, 1.29 to 2.64; TSA-adjusted RR, 1.72, 95% CI, 1.33 to 2.23; RR, 2.23, 95% CI, 1.23 to 4.02; TSA-adjusted RR,1.96, 95% CI, 1.20 to 3.21). Under TSA, these results provided a sufficient level of evidence. In conclusion, adjuvant low dose intrathecal meperidine effectively attenuates spinal anaesthesia-associated shivering and reduces rescue analgesics with residual concerns for the nausea and vomiting.

The Analgesic Effect of Ultrasound-Guided Quadratus Lumborum Block After Cesarean Delivery: A Randomized Clinical Trial.

Author(s): Krohg, Anders; Ullensvang, Kyrre; Rosseland, Leiv Arne; Langesæter, Eldrid; Sauter, Axel R

Source: Anesthesia and analgesia; Nov 2017

Publication Type(s): Journal Article

Available at Anesthesia and analgesia - from Ovid (Journals @ Ovid)

Abstract:BACKGROUNDLandmark and ultrasound-guided transversus abdominis plane blocks have demonstrated an opioid-sparing effect postoperatively after cesarean delivery. The more posterior quadratus lumborum (QL) might provide superior local anesthetic spread to the thoracolumbar fascia and paravertebral space. The aim of our study was to evaluate the efficacy of the QL block after cesarean delivery.METHODSA randomized, double-blind, controlled trial was performed. Forty parturients undergoing cesarean delivery received bilateral ultrasound-guided QL blocks with either 2 mg/mL ropivacaine or saline postoperatively. All patients received spinal anesthesia with bupivacaine and sufentanil and a postoperative analgesic regimen of paracetamol, ibuprofen, and ketobemidone administered by a patient-controlled analgesic pump. The ketobemidone consumption and time of each dose administered were recorded. The primary outcome was ketobemidone consumption during the first 24 hours postoperatively. Secondary and exploratory analyses compared repeated measures of pain scores, nausea, and fatigue, and total differences in time until patients were able to stand and able to walk 5 m, and the interaction between the effective analgesic score and time.RESULTSAll 40 patients completed the trial, 20 in each group. The cumulative ketobemidone consumption in 24 hours was reduced in the active group compared with the control group (P = .04; ratio of means = 0.60; 95% confidence interval, 0.37-0.97). The effective analgesic scores were significantly better in the treatment group compared with the placebo group both at rest (P < .01) and during coughing (P < .01).CONCLUSIONSQL block with ropivacaine reduces the postoperative ketobemidone consumption and pain intensity as a part of a multimodal analgesic regimen that excludes neuraxial morphine.This is an open-access article distributed under the terms of the Creative Commons Attribution-Non Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal.

Dexamethasone as an adjuvant to peripheral nerve block.

Author(s): Pehora, Carolyne; Pearson, Annabel Me; Kaushal, Alka; Crawford, Mark W; Johnston, Bradley

Source: The Cochrane database of systematic reviews; Nov 2017; vol. 11 ; p. CD011770

Publication Type(s): Journal Article Review

PubMedID: 29121400

Available at The Cochrane database of systematic reviews - from Cochrane Collaboration (Wiley)

Abstract:BACKGROUNDPeripheral nerve block (infiltration of local anaesthetic around a nerve) is used for anaesthesia or analgesia. A limitation to its use for postoperative analgesia is that the analgesic effect lasts only a few hours, after which moderate to severe pain at the surgical site may

result in the need for alternative analgesic therapy. Several adjuvants have been used to prolong the analgesic duration of peripheral nerve block, including perineural or intravenous dexamethasone.OBJECTIVESTo evaluate the comparative efficacy and safety of perineural dexamethasone versus placebo, intravenous dexamethasone versus placebo, and perineural dexamethasone versus intravenous dexamethasone when added to peripheral nerve block for postoperative pain control in people undergoing surgery.SEARCH METHODSWe searched the Cochrane Central Register of Controlled Trials, MEDLINE, Embase, DARE, Web of Science and Scopus from inception to 25 April 2017. We also searched trial registry databases, Google Scholar and meeting abstracts from the American Society of Anesthesiologists, the Canadian Anesthesiologists' Society, the American Society of Regional Anesthesia, and the European Society of Regional Anaesthesia.SELECTION CRITERIAWe included all randomized controlled trials (RCTs) comparing perineural dexamethasone with placebo, intravenous dexamethasone with placebo, or perineural dexamethasone with intravenous dexamethasone in participants receiving peripheral nerve block for upper or lower limb surgery.DATA COLLECTION AND ANALYSISWe used standard methodological procedures expected by Cochrane.MAIN RESULTSWe included 35 trials of 2702 participants aged 15 to 78 years; 33 studies enrolled participants undergoing upper limb surgery and two undergoing lower limb surgery. Risk of bias was low in 13 studies and high/unclear in 22. Perineural dexamethasone versus placeboDuration of sensory block was significantly longer in the perineural dexamethasone group compared with placebo (mean difference (MD) 6.70 hours, 95% confidence interval (CI) 5.54 to 7.85; participants1625; studies 27). Postoperative pain intensity at 12 and 24 hours was significantly lower in the perineural dexamethasone group compared with control (MD -2.08, 95% CI -2.63 to -1.53; participants 257; studies 5) and (MD -1.63, 95% CI -2.34 to -0.93; participants 469; studies 9), respectively. There was no significant difference at 48 hours (MD -0.61, 95% CI -1.24 to 0.03; participants 296; studies 4). The quality of evidence is very low for postoperative pain intensity at 12 hours and low for the remaining outcomes. Cumulative 24-hour postoperative opioid consumption was significantly lower in the perineural dexamethasone group compared with placebo (MD 19.25 mg, 95% CI 5.99 to 32.51; participants 380; studies 6). Intravenous dexamethasone versus placeboDuration of sensory block was significantly longer in the intravenous dexamethasone group compared with placebo (MD 6.21, 95% CI 3.53 to 8.88; participants 499; studies 8). Postoperative pain intensity at 12 and 24 hours was significantly lower in the intravenous dexamethasone group compared with placebo (MD -1.24, 95% CI -2.44 to -0.04; participants 162; studies 3) and (MD -1.26, 95% CI -2.23 to -0.29; participants 257; studies 5), respectively. There was no significant difference at 48 hours (MD -0.21, 95% CI -0.83 to 0.41; participants 172; studies 3). The quality of evidence is moderate for duration of sensory block and postoperative pain intensity at 24 hours, and low for the remaining outcomes. Cumulative 24-hour postoperative opioid consumption was significantly lower in the intravenous dexamethasone group compared with placebo (MD -6.58 mg, 95% CI -10.56 to -2.60; participants 287; studies 5). Perinerual versus intravenous dexamethasoneDuration of sensory block was significantly longer in the perineural dexamethasone group compared with intravenous by three hours (MD 3.14 hours, 95% CI 1.68 to 4.59; participants 720; studies 9). We found that postoperative pain intensity at 12 hours and 24 hours was significantly lower in the perineural dexamethasone group compared with intravenous, however, the MD did not surpass our pre-determined minimally important difference of 1.2 on the Visual Analgue Scale/Numerical Rating Scale, therefore the results are not clinically significant (MD -1.01, 95% CI -1.51 to -0.50; participants 217; studies 3) and (MD -0.77, 95% CI -1.47 to -0.08; participants 309; studies 5), respectively. There was no significant difference in severity of postoperative pain at 48 hours (MD 0.13, 95% CI -0.35 to 0.61; participants 227; studies 3). The quality of evidence is moderate for duration of sensory block and postoperative pain intensity at 24 hours, and low for the remaining outcomes. There was no difference in cumulative postoperative 24-hour opioid consumption (MD -3.87 mg, 95% CI -9.93 to 2.19; participants 242; studies 4). Incidence of severe adverse eventsFive serious adverse events were reported. One block-related event (pneumothorax) occurred in one participant in a trial comparing perineural dexamethasone

and placebo; however group allocation was not reported. Four non-block-related events occurred in two trials comparing perineural dexamethasone, intravenous dexamethasone and placebo. Two participants in the placebo group required hospitalization within one week of surgery; one for a fall and one for a bowel infection. One participant in the placebo group developed Complex Regional Pain Syndrome Type I and one in the intravenous dexamethasone group developed pneumonia. The quality of evidence is very low due to the sparse number of events.AUTHORS' CONCLUSIONSLow- to moderate-quality evidence suggests that when used as an adjuvant to peripheral nerve block in upper limb surgery, both perineural and intravenous dexamethasone may prolong duration of sensory block and are effective in reducing postoperative pain intensity and opioid consumption. There is not enough evidence to determine the effectiveness of dexamethasone as an adjuvant to peripheral nerve block in lower limb surgeries and there is no evidence in children. The results of our review may not apply to participants at risk of dexamethasone-related adverse events for whom clinical trials would probably be unsafe.There is not enough evidence to determine the effectiveness of dexamethasone as an adjuvant to peripheral nerve block in lower limb surgeries and there is no evidence in children. The results of our review may not be apply to participants who at risk of dexamethasone-related adverse events for whom clinical trials would probably be unsafe. The nine ongoing trials registered at ClinicalTrials.gov may change the results of this review.

Epidemiology of septic meningitis associated with neuraxial anesthesia: a historical review and meta-analysis.

Author(s): Zorrilla-Vaca, Andres; Healy, Ryan J; Rivera-Lara, Lucia; Grant, Michael C;

Source: Minerva anestesiologica; Nov 2017

Publication Type(s): Journal Article

Abstract:BACKGROUNDNeuraxial anesthesia in the form of spinal and epidural are two of the most frequent forms of regional anesthesia. We aimed to describe and compare the relevant epidemiological, clinical and microbiological characteristics of all reported cases of septic meningitis associated with the use of spinal and epidural anesthetics.METHODSWe performed a systematic review of septic meningitis associated with neuraxial anesthesia. We included all relevant case-reports and observational studies in which authors described septic meningitis in association with spinal, epidural or combined neuraxial anesthesia using local anesthetics.RESULTSA total of 234 cases of septic meningitis were reported following review of 71 casereport articles and 22 epidemiological studies. In total, there have been 199, 25 and 10 reported cases of septic meningitis associated to spinal, epidural and combined neuraxial anesthesia, respectively. The lack of use of surgical masks was the most common risk factor (41, 16.7%). Streptococcus salivarius was the most common bacteria (17.0%) related to spinal anesthesia and Staphylococcus aureus (26.7%) was the most common one related to epidural. The time to symptom onset was significantly reduced in spinal (median time, 24 hours IQR [8-72] vs. 96 hours IQR [84-240]; P = 0.003) compared to epidural anesthesia. The overall mortality rate is 15.3% and 13.3% for reported cases related to spinal and epidural anesthesia, respectively.CONCLUSIONSWhile the true incidence remains speculative, this review suggests that given increasing indications for spinals and epidurals, septic meningitis remains an important associated with neuraxial anesthesia.

Crystalloid versus colloid fluids for reduction of postoperative ileus after abdominal operation under combined general and epidural anesthesia.

Author(s): Ghodraty, Mohammad Reza; Rokhtabnak, Faranak; Dehghan, Hossein Reza;

Source: Surgery; Nov 2017; vol. 162 (no. 5); p. 1055-1062

Publication Type(s): Comparative Study Randomized Controlled Trial Journal Article

Abstract:BACKGROUNDThe main objective of this study was to compare the effect of perioperative administration of crystalloid versus colloid solutions and its impact on reversal of ileus after resection with primary anastomosis of intestine. We hypothesized that inclusion of colloids will improve the return of intestinal motility.METHODSIn a double-blinded clinical trial, 91 the American Society of Anesthesiologists I to III patients undergoing abdominal operation for resection with anastomosis of small or large intestine were randomized to receive either lactated Ringer solution crystalloid group or 6% hydroxyethyl starch colloid group to replace intraoperative fluid loss (blood loss + third space). The time to resume normal intestinal motility was the primary end point and the prevalence of composite postoperative complications was the secondary end point.RESULTSAverage duration of ileus was 86.7 ± 23.6 hours in crystalloid group and it lasted 73.4 ± 20.8 hours in colloid group (P = .006). While there was no difference in the frequency of postoperative nausea and vomiting between the 2 groups (P = .3), the actual vomiting occurred less frequently in colloid group (P = .02). Serum concentrations of potassium ion decreased significantly in both groups, whereas the degree of potassium changes was more remarkable in colloid group compared with crystalloid group (P = .03). Postoperative ileus did not correlate with sex, age, and the duration of operation. Duration of hospital stay was similar between the 2 groups.CONCLUSIONWe concluded that administration of colloids as a part of perioperative fluid management improves intestinal motility and shortens the duration of ileus after gastrointestinal operations. This may improve the tolerance for enteral feeding and reduce ileus-related symptoms.

Dexamethasone and Dexmedetomidine as an Adjuvant to Intraarticular Bupivacaine for Postoperative Pain Relief in Knee Arthroscopic Surgery: A Randomized Trial.

Author(s): Moeen, Seham M; Ramadan, Islam K; Elkady, Hesham A

Source: Pain physician; Nov 2017; vol. 20 (no. 7); p. 671-680

Publication Type(s): Journal Article

Abstract:BACKGROUNDKnee arthroscopy causes minimal trauma, however, good analgesia is required for early rehabilitation and return to normal life in the patients.OBJECTIVEWe aimed to compare the analgesic effects of intraarticular dexamethasone and dexmedetomidine added to bupivacaine with those of bupivacaine alone.STUDY DESIGNThis study uses a double-blind, randomized, controlled design with allocation concealment in a 3-armed parallel group format among patients undergoing arthroscopic meniscal surgery.SETTINGThe study was conducted at Assiut University Hospital in Asyut, Egypt. The study duration was from July 2016 to February 2017.METHODSAfter the ethics committee approval, 60 patients, with the American Society of Anesthesiologists (ASA) physical status of I or II, 20 - 50 years old, and scheduled for arthroscopic meniscal surgery were randomized in a double-blind manner to receive 18 mL intraarticular bupivacaine 0.25% with either dexamethasone 8 mg (group I), dexmedetomidine 1 ug/kg (group II), or 2 mL of normal saline (group III). The total volume of injectate used in each group was 20 mL. All of the patients received spinal anesthesia. Postoperatively, oral paracetamol 1000 mg was given every 8 hours, and oral tramadol 50 mg was administered, as needed, for rescue analgesia. The visual analog scale (VAS) pain scores, time to first analgesic request, and total dose of postoperative analgesics were recorded for 3 days postoperatively.RESULTSThe VAS scores were lower in groups I and II compared with group III. The time to the first analgesic was significantly shorter in group III compared with groups I and II (P = 0.001). The total dose of rescue paracetamol was higher in group III compared with groups I and II (P = 0.001). No need for tramadol rescue analgesia was recorded in any of the groups. No significant differences between groups I and II were noticed.LIMITATIONSThe limitations of this study include the lack of previous research to compare the effect of both intraarticular dexamethasone and dexmedetomidine added to bupivacaine for postoperative analgesia in arthroscopic knee surgery. Additionally, there was a short observation period for the detection of chondrotoxicity, if occurred.CONCLUSIONThe addition of dexamethasone or dexmedetomidine to a solution of bupivacaine 0.25% provided better analgesia than using

bupivacaine alone.CLINICAL TRIAL REGISTRATIONNCT02818985.KEY WORDSIntraarticular, knee arthroscopy, bupivacaine, dexmedetomidine, dexamethasone, postoperative pain.

Comparison of the Recovery Profile between Desflurane and Sevoflurane in Patients Undergoing Bariatric Surgery-a Meta-Analysis of Randomized Controlled Trials.

Author(s): Singh, Preet Mohinder; Borle, Anuradha; McGavin, Jason; Trikha, Anjan; Sinha, Ashish

Source: Obesity surgery; Nov 2017; vol. 27 (no. 11); p. 3031-3039

Publication Type(s): Journal Article Review

Abstract: Early and clear recovery from anesthesia is the crux for preventing perioperative complications in the obese undergoing bariatric surgery. Volatile inhalation agents by virtue of high lipid solubility are expected to produce residual anesthetic effects. Prospective randomized trials comparing desflurane and sevoflurane used for anesthesia maintenance (electroencephalograph guided) during bariatric surgery published till 1st of July 2017 were searched in the medical database. Comparisons were made for surrogate markers of recovery from anesthesia that included time to eye-opening (TEo), time to tracheal-extubation (TEx), and Aldrete scores on immediately shifting to recovery (Ald-I). Five trials were included in the final analysis. Patients receiving desflurane began to respond faster by opening eyes on command (five trials) by 3.80 min (95%CI being 1.83-5.76) (random effects, P < 0.01, I2 = 78.61%), and tracheal extubation was also performed earlier (four trials) by 4.97 min (95%CI being 1.34-8.59). This meant a reduction of 37% in TEo and 33.60% in TEx over sevoflurane. Ald-I scores were higher/better with desflurane by 0.52 (95%CI being 0.19-0.84) (Fixed-effects, P < 0.01, I2 = 6.67%). Publication bias is likely for TEo (Egger's Test, X-intercept = - 8.57, P = 0.02). No airway-related complications were reported with desflurane's expedited recovery. Use of desflurane compared to sevoflurane for maintenance of anesthesia in morbidly obese patients allows attaining verbal contact faster, and tracheal extubating can be performed earlier without compromising safety. The benefits of better recovery extend into the immediate postoperative phase with patients being more awake upon shifting to the recovery.

Anaesthetic depth control using closed loop anaesthesia delivery system vs. target controlled infusion in patients with moderate to severe left ventricular systolic dysfunction.

Author(s): Mahajan, V; Samra, T; Puri, G D; Head of Department of Anesthesia

Source: Journal of clinical anesthesia; Nov 2017; vol. 42 ; p. 106-113

Publication Type(s): Journal Article

Abstract:OBJECTIVESTo compare the efficacy of anaesthetic depth control using Closed Loop Anaesthesia Delivery System (CLADS) and Target Controlled Infusion (TCI) in patients with moderate to severe left ventricular dysfunction (LVSD).DESIGNRandomized control trial.PATIENTSForty ASA III/IV adult patients with moderate to severe LVSD scheduled for open heart surgery.INTERVENTIONSPropofol was administered using CLADS or TCI for maintaining BIS of 50. Induction and maintenance doses were controlled automatically in CLADS. Dixon's up and down method was used to estimate the plasma concentration needed for induction in TCI.MEASUREMENTPercentage of total anaesthesia time ("valid CLADS time") for which BIS remained within ±10 of target (BIS=50).MAIN RESULTSBIS remained within ±10 of the target for a significantly longer duration of time in CLADS group (p=0.001). Performance parameters like Median Performance Error (MDPE), p=0.024; Median Absolute Performance Error (MDAPE), p=0.0212; and global score p=0.017 were significantly better in CLADS group. Total propofol consumption was significantly less in CLADS group (p=0.014). Mean value (95% CI) of EC50 and EC95 for target plasma propofol concentration for induction was 1.62 (1.45-1.79) µgml-1 and 1.87 (1.73-2.96) µgml-1 respectively using probit analysis.CONCLUSIONSClosed loop delivery of propofol using CLADS

performed significantly better than TCI in this subset of patients. CLINICAL TRIALS REGISTRATION NO.: www.ClinicalTrials.gov-NCT02645994.

Outcomes of cancer surgery after inhalational and intravenous anesthesia: A systematic review.

Author(s): Soltanizadeh, Sinor; Degett, Thea H; Gögenur, Ismail

Source: Journal of clinical anesthesia; Nov 2017; vol. 42 ; p. 19-25

Publication Type(s): Journal Article Review

Abstract: Perioperative factors are probably essential for different oncological outcomes. This systematic review investigates the literature concerning overall mortality and postoperative complications after cancer surgery with inhalational (INHA) and intravenous anesthesia (TIVA). A search was conducted according to the PRISMA guidelines, including studies with patients undergoing surgery for cancer and where TIVA was compared with INHA. Two investigators identified relevant papers in the databases: PubMed, Scopus, EMBASE and the Cochrane Library. Risks of bias assessment tools from the Cochrane Collaboration were used for evaluating quality of evidence. Eight studies with a total of 10,696 patients were included. Four studies reported data regarding overall mortality and four studies reported data regarding postoperative complications. Evidence was evaluated to be of moderate to serious risk of bias. Three retrospective studies presented a hazard ratio (HR) adjusting for several confounders. One study reported an increased overall mortality after INHA with a HR of 1.47 (95% CI 1.31-1.64, p≤0.001), while another study reported a tendency of decreased overall mortality after TIVA (HR 0.85, 95% CI 0.72-1.00, p=0.051). A third study showed no difference in the overall mortality, but prolonged recurrence-free survival after TIVA with a HR of 0.48 (95% CI 0.27-0.86, p=0.014). In one study, the rate of pulmonary complications was significantly higher after INHA compared with TIVA, while other postoperative complications were comparable. There are currently four propensity-adjusted retrospective studies indicating that TIVA might be the preferred anesthetic choice in cancer surgery. However, evidence is currently of low quality and randomized clinical trials are required for further investigation.

Feasibility, safety, and preliminary efficacy of Low Amplitude Seizure Therapy (LAP-ST): A proof of concept clinical trial in man.

Author(s): Youssef, Nagy A; Sidhom, Emad

Source: Journal of affective disorders; Nov 2017; vol. 222 ; p. 1-6

Publication Type(s): Journal Article

Abstract:BACKGROUNDCurrent pulse amplitude used in clinical ECT may be higher than needed. Reducing pulse amplitude may improve focality of the electric field and thus cognitive adverse effects. Here we examine the feasibility, safety, and whether Low Pulse Amplitude Seizure Therapy (LAP-ST, 0.5-0.6A) minimizes cognitive adverse effects while retaining efficacy.METHODSPatients with treatment-resistant primary mood (depressive episodes) or psychotic disorders who were clinically indicated to undergo ECT were offered to be enrolled in an open-label study. The study consisted of a full acute course of LAP-ST under standard anesthesia and muscle relaxation. The primary outcome was feasibility of seizure induction. Clinical outcome measures were: time to reorientation (TRO), Mini Mental State Examination, Montgomery Aberg Depression Scale, and Brief Psychiatric Rating Scale, and Clinical Global Impression Scale.RESULTSTwenty-two patients consented for enrollment in the study. LAP-ST was feasible, and all patients had seizures in the first session. Participants had a quick orientation with median TRO of 4.5min. Treatment was efficacious for both depressive and psychotic symptoms.LIMITATIONSRelatively small sample size, non-blinded, and no randomization was performed in this initial proof of concept study.CONCLUSIONSThis first human preliminary data of a full course of focal LAP-ST demonstrates that seizure induction is feasible. These results, although preliminary, suggest that the LAP-ST compared to the standard ECT

techniques may result in less cognitive side effects, but comparable efficacy. Larger studies are needed to replicate these findings.

Type of obstetric anesthesia administered and complications in women with preeclampsia in low- and middle-income countries: A systematic review.

Author(s): Sobhy, Soha; Dharmarajah, Kuhan; Arroyo-Manzano, David; Navanatnarajah, Ramesan

Source: Hypertension in pregnancy; Nov 2017; vol. 36 (no. 4); p. 326-336

Publication Type(s): Journal Article

Abstract:BACKGROUNDDelivery is often expedited with cesarean section, necessitating anesthesia, to prevent complications in women with preeclampsia. Anesthesia-associated risks in these women from low- and middle-income countries (LMICs) are not known.METHODSWe searched major databases (until February 2017) for studies on general vs. regional anesthesia in women with preeclampsia. We summarized the association between outcomes and type of anesthesia using a random effects model and reported as odds ratio (OR) with 95% confidence intervals (95% CIs).FINDINGSWe included 14 studies (10,411 pregnancies). General anesthesia was associated with an increase in the odds of maternal death sevenfold (OR 7.70, 95% CI 1.9 to 31.0, I2 = 58%) than regional anesthesia. The odds of pulmonary edema (OR 5.16, 95% CI 2.5 to 10.4, I2 = 0%), maternal intensive care unit admissions (OR 16.25, 95% CI 9.0 to 29.5, I2 = 65%), and perinatal death (OR 3.01, 95% CI 1.4 to 6.5, I2 = 56%) were increased with general vs. regional anesthesia.CONCLUSIONGeneral anesthesia is associated with increased complications in women with preeclampsia undergoing cesarean section in LMIC.

SmartPilot® view-guided anaesthesia improves postoperative outcomes in hip fracture surgery: a randomized blinded controlled study.

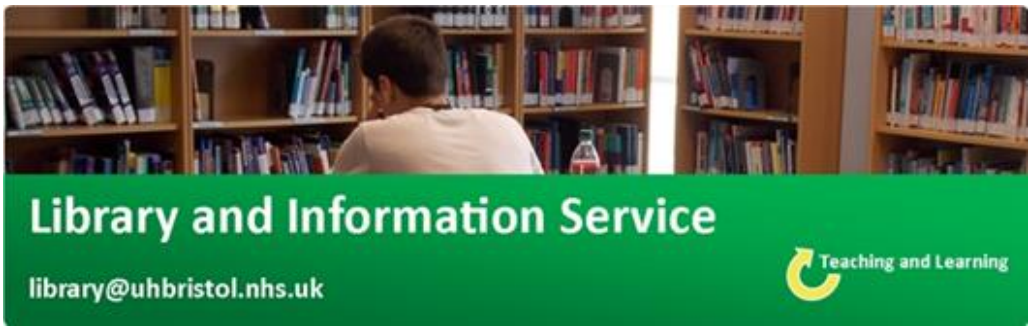
Author(s): Leblanc, D; Conté, M; Masson, G; Richard, F; Jeanneteau, A; Bouhours, G; Chrétien, J M

Source: British journal of anaesthesia; Nov 2017; vol. 119 (no. 5); p. 1022-1029

Publication Type(s): Journal Article

Available at British journal of anaesthesia - from HighWire - Free Full Text

Abstract: BackgroundBoth under-dosage and over-dosage of general anaesthetics can harm frail patients. We hypothesised that computer-assisted anaesthesia using pharmacokinetic/pharmacodynamic models guided by SmartPilot® View (SPV) software could optimise depth of anaesthesia and improve outcomes in patients undergoing hip fracture surgery.MethodsThis prospective, randomized, single-centre, blinded trial included patients undergoing hip fracture surgery under general anaesthesia. In the intervention group, anaesthesia was guided using SPV with predefined targets. In the control group, anaesthesia was delivered by usual practice using the same agents (propofol, sufentanil and desflurane). The primary endpoint was the time spent in



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