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Anaesthesia

Evidence Update

April 2018
(Quarterly)

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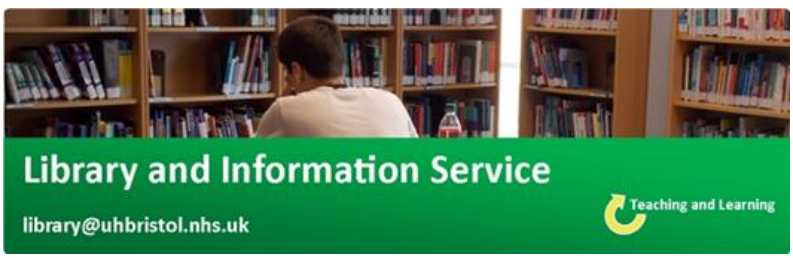

Lunchtime Drop-in Sessions

April (12.00-13.00)

5th (Thu) **Literature Searching**

9th (Mon) **Critical Appraisal**

17th (Tue) **Statistics**

25th (Wed) **Literature Searching**

May (13.00-14.00)

3rd (Thu) **Critical Appraisal**

11th (Fri) **Statistics**

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22nd (Tue) **Critical Appraisal**

30th (Wed) **Statistics**

June (12.00-13.00)

7th (Thu) **Literature Searching**

11th (Mon) **Critical Appraisal**

20th (Wed) **Statistics**

28th (Thu) **Literature Searching**

Your Outreach Librarian: Jo Hooper

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The Association of Anaesthetists of Great Britain and Ireland (AAGBI)

Latest News

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New guidance on reflective learning 27 March 2018

Joint campaign aims to put NHS workforce fatigue to bed, this World Sleep Day 16 March 2018

AAGBI statement in response to The Report of the Short Life Working Group on reducing medication-related harm 23 February 2018

April 2018 Anaesthesia News

https://www.aagbi.org/sites/default/files/ANews_April_webready_0.pdf

NICE National Institute for Health and Care Excellence

The use of extracorporeal membrane oxygenation in the anticipated difficult airway: a case report and systematic review Source: PubMed - 01 March 2018 - Publisher: Canadian Journal Of Anaesthesia Read Summary

The role of the therapeutic alliance on pain relief in musculoskeletal rehabilitation: A systematic review Source: PubMed - 05 February 2018 - Publisher: Physiotherapy Theory And Practice. Read Summary

How do local anesthetics compare with placebo or no treatment for pain relief in women undergoing outpatient hysteroscopy? Source: Cochrane Clinical Answers - 26 March 2018

The efficacy and safety of nefopam for pain relief during laparoscopic cholecystectomy: A meta-analysis Source: PubMed - 01 March 2018 - Publisher: Medicine Read Summary

Guidelines for the Provision of Ophthalmic Anaesthesia Services 2018 [PDF]
Source: Royal College of Anaesthetists - 15 March 2018

Guidelines for the Provision of Paediatric Anaesthesia Services 2018 [PDF]
Source: Royal College of Anaesthetists - 13 March 2018

Guidelines for the Provision of Anaesthesia Services for Day Surgery 2018 [PDF]
Source: Royal College of Anaesthetists - 13 March 2018

Guidelines for the Provision of Anaesthesia Services for an Obstetric Population 2018 [PDF]
Source: Royal College of Anaesthetists - 15 March 2018
Guidelines for the Provision of Anaesthesia Services in the Non-theatre Environment 2018 [PDF]
Source: Royal College of Anaesthetists - 13 March 2018

Guidelines for the Provision of Anaesthesia Services for Burn and Plastics Surgery 2018 [PDF]
Source: Royal College of Anaesthetists - 16 March 2018

Guidelines for the Provision of Anaesthesia Services for Pre-operative Assessment and Preparation 2018 [PDF] Source: Royal College of Anaesthetists - 09 March 2018

Gidance on the Provision of Anaesthesia Services for Cardiac and Thoracic Procedures 2018 [PDF]
Source: Royal College of Anaesthetists - 16 March 2018

Guidelines for the Provision of Anaesthesia Services for Intra-operative Care 2018 [PDF]
Source: Royal College of Anaesthetists - 10 March 2018

Guidelines for the Provision of Anaesthesia Services for Trauma and Orthopaedic Surgery 2018 [PDF]
Source: Royal College of Anaesthetists - 15 March 2018

Use of hyaluronidase as an adjunct to local anaesthetic eye blocks to reduce intraoperative pain in adults

Online Publication Date: March 2018

Relaxation techniques for pain management in labour

Online Publication Date: March 2018

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Online Publication Date: March 2018

Propofol for the promotion of sleep in adults in the intensive care unit

Online Publication Date: January 2018

Percutaneous vertebroplasty for osteoporotic vertebral compression fracture

Online Publication Date: April 2018

Pre-emptive and preventive NSAIDs for postoperative pain in adults undergoing all types of surgery

Online Publication Date: March 2018

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Online Publication Date: January 2018

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Online Publication Date: February 2018

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British Journal Of Anaesthesia

April 2018: 120 (4)

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Mode of anaesthesia for Caesarean delivery and maternal morbidity: can we overcome confounding by indication?
Analysing tidal volumes early after a positive end-expiratory pressure increase: a new way to determine optimal PEEP in the operating theatre?
The dark ages of maternal sepsis: time to be enlightened
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Steroids in cardiac surgery: a systematic review and meta-analysis

Efficacy and adverse effects of buprenorphine in acute pain management: systematic review and meta-analysis of randomised controlled trials

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Persistent alteration in behavioural reactivity to a mild social stressor in rhesus monkeys repeatedly exposed to sevoflurane in infancy

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Pattern of perioperative gabapentinoid use and risk for postoperative naloxone administration

Anti-nociceptive effects of caloric restriction on neuropathic pain in rats involves silent information regulator 1

Ketamine and norketamine attenuate oxycodone tolerance markedly less than that of morphine: from behaviour to drug availability

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Cutaneous innervation of the hand: clinical testing in volunteers shows high intra- and inter-individual variability

Single-shot pectoral plane (PECs I and PECs II) blocks versus continuous local anaesthetic infusion analgesia or both after non-ambulatory breast-cancer surgery: a prospective, randomised, double-blind trial

Investigation into the visual perceptive ability of anaesthetists during ultrasound-guided interscalene and femoral blocks conducted on soft embalmed cadavers: a randomised single-blind study

Evaluation of lung and chest wall mechanics during anaesthesia using the PEEP-step method

Non-invasive positive-pressure ventilation with positive end-expiratory pressure counteracts inward air leaks during preoxygenation: a randomised crossover controlled study in healthy volunteers

Comments on ‘An overview of space medicine’

Current Opinion in Anesthesiology

April 2018: 31 (2)

Library Clinic

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April 4th: **Foyer, Education Centre** *12.00-14.00*

April 11th: **Foyer, St Michael's Hospital** *12.00-14.00*

May 2nd: **Canteen (Level 9, BRI)** *12.00-14.00*

June 6th: **Terrace (Level 4, Education Centre)** *12.00-14.00*

June 19th: **Welcome Centre, BRI** *10.00-16.00*

July 3rd: **Welcome Centre, BRI** *10.00-16.00*

July 4th: **Canteen (Level 9, BRI)** *12.00-14.00*

August 8th: **Foyer, Education Centre** *12.00-14.00*

August 29th: **Foyer, St Michael's Hospital** *12.00-14.00*

September 5th: **Canteen (Level 9, BRI)** *12.00-14.00*

September 11th: **Welcome Centre, BRI** *10.00-16.00*

October 3rd: **Terrace (Level 4, Education Centre)** *12.00-14.00*

November 7th: **Canteen (Level 9, BRI)** *12.00-14.00*

December 5th: **Foyer, Education Centre** *12.00-14.00*

December 11th: **Welcome Centre, BRI** *10.00-16.00*

Latest Evidence: Database Articles

If you require any of the articles in full please email: library@uhbristol.nhs.uk

Anesthesia management of complete versus incomplete placenta previa: a retrospective cohort study
Author(s): Orbach-Zinger S.; Balla A.; Fein S.; Eidelman L.A.; Weiniger C.F.; Aviram A.; Ioscovich A.
Source: Journal of Maternal-Fetal and Neonatal Medicine; May 2018; vol. 31 (no. 9); p. 1171-1176
Publication Date: May 2018
Publication Type(s): Article
Abstract: Purpose: Placenta previa (PP) is a major cause of obstetric hemorrhage. Clinical diagnosis of complete versus incomplete PP has a significant impact on the peripartum outcome. Our study objective is to examine whether distinction between PP classifications effect anesthetic management. Methods and materials: This multi-center, retrospective, cohort study was performed in two tertiary university-affiliated medical centers between the years 2005 and 2013. Electronic delivery databases were reviewed for demographic, anesthetic, obstetric hemorrhage, and postoperative outcomes for all cases. Results: Throughout the study period 452 cases of PP were documented. We found 134 women (29.6%) had a complete PP and 318 (70.4%) had incomplete PP. Our main findings were that women with complete PP intraoperatively had higher incidence of general anesthesia (p =.017), higher mean estimated blood loss (p <.001), increased blood components transfusions (p <.001), and significant increase in cesarean hysterectomy rate (p <.001) than women with incomplete PP. Additionally, complete PP was associated with more postoperative complications: higher incidence of admission to the intensive care unit (ICU) (p <.001), more mechanical ventilation (p =.02), a longer median postoperative care unit (PACU) (p =.02), ICU (p =.002), and overall length of stay in the hospital (p <.001). Conclusions: Complete PP is associated with increased risk of hemorrhage compared with incomplete PP. Therefore distinction between classifications should be factored into anesthetic management protocols.

Ketamine versus hydromorphone patient-controlled analgesia for acute pain in trauma patients
Author(s): Takieddine S.C.; Droege C.A.; Ernst N.; Droege M.E.; Webb M.; Mueller E.W.; Branson R.D.; Gerlach T.W.; Robinson B.R.H.; Johannigman J.A.
Source: Journal of Surgical Research; May 2018; vol. 225 ; p. 6-14
Publication Date: May 2018
Publication Type(s): Article
Abstract: Background: It is unknown whether ketamine administered via patient-controlled analgesia (PCA) provides adequate analgesia while reducing opioid consumption in the traumatically injured patient. Differences in opioid consumption, pain scores, and adverse effects between ketamine and hydromorphone PCA were studied. Materials and methods: This is an investigator-initiated, single-center, double-blinded, randomized, pilot trial conducted from 2014 to 2016 at a level 1 trauma center. Nonintubated trauma patients in intensive care, who were receiving PCA, were randomized to ketamine or hydromorphone PCA plus opioid analgesics for breakthrough pain. Results: Twenty subjects were randomized. There was no difference in median daily breakthrough opioid use (10 [0.63-19.38] mg versus 10 [4.38-22.5] mg, P = 0.55). Subjects in the ketamine group had lower median cumulative opioid use on therapy day 1 than the hydromorphone group (4.6 [2.5-15] mg versus 41.8 [31.8-50] mg, P < 0.001), as well as in the first 48 h (10 [3.3-15] mg versus 48.5 [32.1-67.5] mg, P < 0.001) and first 72 h (10 [4.2-15] mg versus 42.5 [31.7-65.2] mg, P < 0.001) of therapy. Daily oxygen supplementation requirements were lower in the ketamine group (0.5 [0-1.5] L/min versus 2 [0.5-3] L/min, P = 0.020). Hallucinations occurred more frequently in the ketamine group (40% versus 0%, P = 0.090). Conclusions: Ketamine PCA led to lower cumulative opioid consumption and lower oxygen supplementation requirements, though hallucinations occurred more frequently with use of ketamine. Additional studies are needed to investigate the tolerability of ketamine as an alternative to traditional opioid-based PCA.

Comparing adductor canal block with local infiltration analgesia in total knee arthroplasty: A prospective, blinded and randomized clinical trial
Author(s): Tong Q.J.; Lim Y.C.; Tham H.M.
Source: Journal of Clinical Anesthesia; May 2018; vol. 46 ; p. 39-43

Publication Date: May 2018
Publication Type(s): Article
Abstract: Study objective: Total knee arthroplasty (TKA) is associated with significant pain post-operatively. Our hypothesis is that adductor canal block (ACB) would be superior to local infiltration analgesia (LIA) in terms of providing analgesia, while still preserving quadriceps strength and enabling early postoperative rehabilitation. Design: A prospective, blinded and randomized clinical trial between LIA and ACB was conducted. Setting: Tertiary care urban hospital. Patients: 40 patients (ASA I to III) undergoing primary TKA under single-dose spinal anesthesia were prospectively randomized from January 2014 to October 2015. Interventions: The LIA group received local infiltration of Ropivacaine 150 mg, Ketorolac 30 mg, Morphine 10 mg, and Adrenaline 200 mcg in a total volume of 75 mls, administered intraoperatively by the surgeon. The ACB group was given an ACB postoperatively by one of the study investigators at the end of surgery with 30 mls of 0.5% Ropivacaine. Measurements: The primary outcome was total Morphine consumption in the first 24 h. Secondary outcomes included total Morphine consumption in the first 48 h, pain scores, quadriceps strength, the Timed Up and Go test (TUG), the 30 s Chair Stand Test (30s-CST) and length of hospital stay. Main results: The median (interquartile range) 24 h Morphine consumption was 6 mg (2.3-18.3) in the ACB group and 17.5 mg (12-24.3) in the LIA group, p = 0.004. The 48 h Morphine consumption was 14.5 mg (7.5-28.5) in the ACB group as compared to 24 mg (14-33.8) in the LIA group, p = 0.03. There were no statistically significant differences in the other secondary outcomes. Conclusion: ACB group had statistically significant reduced total Morphine consumption in the first 24 and 48 hours as compared to LIA group, with no statistically significant differences in functional outcomes of TKA patients.

The effect of spinal versus general anesthesia on intraocular pressure in lumbar disc surgery in the prone position: A randomized, controlled clinical trial
Author(s): Pinar H.U.; Karaca O.; Dogan R.; Kasdogan Z.E.A.; Basaran B.; Coven I.
Source: Journal of Clinical Anesthesia; May 2018; vol. 46 ; p. 54-58
Publication Date: May 2018
Publication Type(s): Article
Abstract: Objective: To compare IOP changes between spinal anesthesia (SA) and general anesthesia (GA) in patients who underwent lumbar disc surgery in the prone position. Design: Prospective, randomized, controlled trial. Setting: Operating room. Patients: Forty ASA I-II patients scheduled for lumbar disc surgery in prone position. Intervention: Patients were randomly allocated to the SA or GA groups. Measurements: IOP was measured before anesthesia (IOP1), 10 min after spinal or general anesthesia in supine position (IOP2), 10 min after being placed in the prone position (IOP3), and at the end of the operation in the prone position (IOP4). Main results: There was no significant difference between baseline IOP1 (group GA = 19.4 +/- 3.2 mmHg; group SA = 18.6 +/- 2.4 mmHg) and IOP2 values (group GA = 19.7 +/- 4.1 mmHg; group SA = 18.4 +/- 1.9 mmHg) between and within the groups. IOP values after prone positioning and group GA measurements (IOP3 = 21.6 +/- 3.1 mmHg; IOP4 = 33.9 +/- 3.1 mmHg) were significantly higher when compared with the SA group (IOP3 = 19.3 +/- 2.7 mmHg, IOP4 = 26.9 +/- 2.4 mmHg) ($p = 0.018$ and $p < 0.001$, respectively). Furthermore, IOP3 was significantly increased when compared with IOP2 in the GA group but not in the SA group ($p = 0.019$ and $p = 0.525$, respectively). In both groups, IOP4 values were significantly higher than the other three measurements ($p < 0.001$). Conclusion: The results indicated that IOP increase is significantly less in patients who undergo lumbar disc surgery in the prone position under SA compared with GA.

Comparison of double intravenous vasopressor automated system using nexfin versus manual vasopressor bolus administration for maintenance of haemodynamic stability during spinal anaesthesia for caesarean delivery: A randomised double-blind controlled trial.
Author(s): Sng, Ban Leong; Du, Wei; Lee, Man Xin; Ithnin, Farida; Mathur, Deepak; Leong, Wan Ling; Sultana, Rehena; Han, Nian-Lin R; Sia, Alex Tiong Heng
Source: European journal of anaesthesiology; May 2018; vol. 35 (no. 5); p. 390-397
Publication Date: May 2018
Publication Type(s): Journal Article
PubMedID: 29373334
Abstract:BACKGROUNDHypotension is a common side effect of spinal anaesthesia during caesarean delivery and is associated with maternal and foetal adverse effects. We developed an updated double intravenous vasopressor automated (DIVA) system that administers phenylephrine or ephedrine based on continuous noninvasive haemodynamic monitoring using the Nexfin device.OBJECTIVEThe aim of our present study is to compare the performance and reliability of the DIVA system against Manual Vasopressor Bolus

administration.DESIGNA randomised, double-blind controlled trial.SETTINGSingle-centre, KK Women's and Children's Hospital, Singapore.PATIENTSTwo hundred and thirty-six healthy women undergoing elective caesarean delivery under spinal anaesthesia.MAIN OUTCOME MEASURESThe primary outcome was the incidence of maternal hypotension. The secondary outcome measures were reactive hypertension, total vasopressor requirement and maternal and neonatal outcomes.RESULTSThe DIVA group had a significantly lower incidence of maternal hypotension, with 39.3% (46 of 117) patients having any SBP reading less than 80% of baseline compared with 57.5% (65 of 113) in the manual vasopressor bolus group (P = 0.008). The DIVA group also had fewer hypotensive episodes than the manual vasopressor bolus group (4.67 versus 7.77%; P < 0.0001). There was no difference in the incidence of reactive hypertension or the total vasopressor requirement. The DIVA group had less wobble in system performance. Maternal and neonatal outcomes were similar.CONCLUSIONThe DIVA system achieved better control of maternal blood pressure after spinal anaesthesia than manual vasopressor bolus administration.TRIAL REGISTRATIONClinicaltrials.gov identifier: NCT02277730.

Dexmedetomidine as a part of general anaesthesia for caesarean delivery in patients with pre-eclampsia: A randomised double-blinded trial.
Author(s): Eskandr, Ashraf M; Metwally, Ahmed A; Ahmed, Abd-Elrahman A; Elfeky, Elham M; Eldesoky, Islam M; Obada, Manar A; Abd-Elmegid, Osama A
Source: European journal of anaesthesiology; May 2018; vol. 35 (no. 5); p. 372-378
Publication Date: May 2018
Publication Type(s): Journal Article
Abstract:BACKGROUNDDuring general anaesthesia, endotracheal intubation of patients with pre-eclampsia causes stimulation of the sympathetic nervous system and catecholamine release, which may lead to maternal and neonatal complications.OBJECTIVETo attenuate both the stress response and the haemodynamic response to tracheal intubation in patients with pre-eclampsia.DESIGNA randomised, double-blind, controlled study.SETTINGSingle University Hospital.PATIENTSSixty patients aged 18 to 45 years with pre-eclampsia receiving general anaesthesia for caesarean section.INTERVENTIONSThe patients were randomly allocated to three groups. Groups D1and D2 received an infusion of dexmedetomidine 1 µg kg over the 10 min before induction of general anaesthesia, then 0.4 and 0.6 µg kg h dexmedetomidine, respectively. Group C received equivalent volumes of 0.9% saline.MAIN OUTCOME MEASURESThe primary outcome was the effect of dexmedetomidine on mean arterial blood pressure measured before induction of general anaesthesia at 1 and 5 min after intubation, and then every 5 min until 10 min after extubation. The secondary outcomes were blood glucose and serum cortisol (measured before induction of general anaesthesia, and at 1 and 5 min after intubation), postoperative visual analogue pain scores, time to first request for analgesia, the total consumption of analgesia, Ramsay sedation score, maternal and placental vein blood serum levels of dexmedetomidine and neonatal Apgar score at 1 and 5 min.RESULTSAt all assessment times, the mean arterial pressures were significantly lower in the dexmedetomidine groups than in the control group. Compared with group C, the heart rate was significantly lower in both groups D1 and D2. In group D2, the heart rate was lower than in group D1. Serum glucose and cortisol were significantly higher in the controls than in either group D1 or D2. Group D2 patients were significantly more sedated on arrival in the recovery room followed by D1. Time to first analgesia was significantly longer in groups D2 and D1 than in group C, and the visual analogue pain scores were significantly lower in groups D1 and D2 than in group C at 1, 2, 3 and 5 h. Total morphine consumption was significantly lower in groups D1 and D2 than in the control group. There was no difference in Apgar scores across the three groups despite significantly higher dexmedetomidine concentrations in group D2 (both maternal and placental vein) than in group D1.CONCLUSIONAdministration of dexmedetomidine in doses 0.4 and 0.6 µg kg h was associated with haemodynamic and hormonal stability, without causing significant adverse neonatal outcome.TRIAL REGISTRATIONPan African Clinical Trial Registry (PACTR201706002303170), (www.pactr.org).

Formulation of a Peribulbar Block for Prolonged Postoperative Pain Management in Vitreoretinal Surgery: A Randomized Clinical Trial
Author(s): Mehta S.; Laird P.; Debiec M.; Hwang C.; Zhang R.; Yan J.; Hendrick A.; Hubbard G.B.; Bergstrom C.S.; Yeh S.; Fernandes A.; Olsen T.W.
Source: Ophthalmology Retina; Apr 2018; vol. 2 (no. 4); p. 268-275
Publication Date: Apr 2018
Publication Type(s): Article

Abstract: Purpose: To evaluate postoperative pain level using a supplemental peribulbar injection at the conclusion of retinal surgery. Design: Prospective, parallel-assigned, single-masked, randomized clinical trial. Participants: Fifty-eight patients undergoing scleral buckle, vitrectomy, or combined surgery. Methods: In a single academic institutional practice, 58 patients undergoing scleral buckle, vitrectomy, or combined surgery were enrolled. Exclusion criteria included those with a risk for glaucoma, a pre-existing chronic pain disorder, among others. Patients were assigned randomly to receive a postoperative peribulbar formulation of either bupivacaine, triamcinolone acetonide, and cefazolin (group A) or bupivacaine, balanced salt solution, and cefazolin (group B). The postoperative pain score and ocular motility were assessed by a masked observer on the first postoperative day. Main Outcome Measures: The primary outcome measure was the postoperative pain score. Secondary outcome measures included oral analgesic use, ocular motility, and intraocular pressure (IOP). Results: The mean pain scores were 2.8+/-2.9 for group A and 3.8+/-2.6 for group B (P = 0.095). Pain was absent in 28% of group A patients versus 14% of group B patients (P = 0.11). Group A required less narcotic pain medication (hydroxycodone: group A, 0.7+/-3 mg vs. group B, 3+/-6 mg; P = 0.05; oxycodone: group A, 7+/-7 mg vs. 9+/-13 mg; P = 0.2) than group B. Motility was full in group B and limited in group A (P <= 0.001), with no differences in mean IOP measurements at any point after surgery. Conclusions: We did not demonstrate a statistically significant reduction in mean postoperative pain scores. However, patients in group A required less hydroxycodone use and had greater akinesia, suggesting prolonged neural blockade.

Pain control with continuous infusion preperitoneal wound catheters versus continuous epidural analgesia in colon and rectal surgery: A randomized controlled trial
Author(s): Mouawad N.J.; Leichtle S.W.; Kaoutzanis C.; Lampman R.; McCord M.; Hoskins K.A.; Cleary R.K.; Welch K.; Winter S.
Source: American Journal of Surgery; Apr 2018; vol. 215 (no. 4); p. 570-576
Publication Date: Apr 2018
Publication Type(s): Article
Abstract: Objective: To compare continuous infusion preperitoneal wound catheters (CPA) versus continuous epidural analgesia (CEA) after elective colorectal surgery. Methods: An open-label equivalence trial randomizing patients to CPA or CEA. Primary outcomes were postoperative pain as determined by numeric pain scores and supplemental narcotic analgesia requirements. Secondary outcomes included incidence of complications and patient health status measured with the SF-36 Health Survey (Acute Form). Results: 98 patients were randomized [CPA (N = 50, 51.0%); CEA (N = 48, 49.0%)]. 90 patients were included [CPA 46 (51.1%); CEA 44 (48.9%)]. Pain scores were significantly higher in the CPA group in the PACU (p = 0.04) and on the day of surgery (p < 0.01) as well as supplemental narcotic requirements on POD 0 (p = 0.02). No significant differences were noted in postoperative complications between groups, aggregate SF-36 scores and SF-36 subscale scores. Conclusions: Continuous epidural analgesia provided superior pain control following colorectal surgery in the PACU and on the day of surgery. The secondary endpoints of return of bowel function, length of stay, and adjusted SF-36 were not affected by choice of peri-operative pain control.

Higher doses of intraoperative analgesia are associated with lower levels of persistent pain and less analgesic consumption six months after total hip arthroplasty
Author(s): von Dincklage F.; Jakuscheit A.; Weth J.; Lichtner G.; Jurth C.; Rehberg-Klug B.
Source: European Journal of Pain (United Kingdom); Apr 2018; vol. 22 (no. 4); p. 691-699
Publication Date: Apr 2018
Publication Type(s): Article
Abstract: Background: Persistent postoperative pain is a major health problem affecting nearly 30% of all patients undergoing total hip arthroplasty. Previous studies have demonstrated an association between the intensity of acute postoperative pain and persistent pain, but this association might be an epiphenomenon of insufficient intraoperative analgesia. In this study, we investigated the association between the intraoperative level of analgesia and the persistent postoperative pain 6 months after surgery. Methods: We investigated 110 patients undergoing primary total hip arthroplasty under total intravenous general anaesthesia in a prospective cohort study. A highly standardized surgical and a standardized anaesthetic procedure were performed to reduce variability and psychosocial influences were investigated to adjust for confounders. Acute postoperative pain was controlled using patient-controlled analgesia pumps. Postoperative pain intensities and analgesic requirements were monitored for 6 months following surgery. Results: Of 105 patients included in the analysis, 32% continued using daily pain medication 6 months after surgery and reported a median pain

level of 4/10. Multivariate analyses confirmed that the amount of intraoperative analgesia is a significant predictor of regular analgesic use and pain intensity 6 months after surgery. Conclusions: Higher levels of intraoperative analgesia are associated with lower levels of persistent pain and less analgesic consumption 6 months after total hip arthroplasty. Persistent pain may be attributable to intraoperative nociception, which is likely not adequately assessed and suppressed using current clinical measures. Significance: Our study suggests that lower doses of intraoperative analgesia are associated with higher levels of persistent postoperative pain. Persistent pain may be caused by intraoperative nociception, which is likely not adequately suppressed using current clinical standard analgesic measures.

Comparing peri-operative complications of paediatric and adult anaesthesia
Author(s): Westerkamp A.C.; De Geus A.F.; Molenbuur B.; Meyer P.; Wietasch J.K.G.; Struys M.M.R.F.; Hendriks H.G.D.
Source: European Journal of Anaesthesiology; Apr 2018; vol. 35 (no. 4); p. 280-288
Publication Date: Apr 2018
Publication Type(s): Article
Abstract:BACKGROUND Comparisons of peri-operative complications associated with paediatric (<=16 years) and adult anaesthesia are poorly available, especially in which cardiac surgery, organ transplantation and neurosurgery are involved. OBJECTIVE The aim of this study was to evaluate the nature and incidence of peri-operative complications that might be due to anaesthesia and to identify independent risk factors for complications in children and adults, including those undergoing cardiac surgery, organ transplantation and neurosurgery. DESIGN Retrospective cohort study. SETTING The study was performed at the University Medical Centre Groningen in the 4 years between 1 January 2010 and the 31 December 2013. MAIN OUTCOME MEASURES Complications and their severity were graded according to the standard complication score (20 items) of the Dutch Society of Anaesthesia. Univariate and multivariate regression analysis was used to identify independent risk factors for the reported complications. RESULTS A total of 81 267 anaesthetic cases were included. In the paediatric cohort, there were 410 (2.9%) complications and 1675 (2.5%) in the adults. In both cohorts age, American Society of Anaesthesiologists classification and emergency treatment were independent risk factors for complications. With respect to age, infants less than 1 year were at the highest risk, whereas in the adult cohort, increased age was related to a greater number of complications. The incidences of the specific complications were different between both cohorts. Upper airway obstruction was more frequently observed in paediatric patients (26%), whereas in the adults, complications with the highest incidence concerned conversion of regional-to-general anaesthesia (25%) and hypotension (17%). CONCLUSION Risk factors for all peri-operative complications were similar for paediatric and adult anaesthesia. However, the incidence of specific complications differed between both age categories.

Incidence and risk factors of anaesthesia-related perioperative cardiac arrest
Author(s): Hohn A.; MacHatschek J.-N.; Padosch S.A.; Franklin J.
Source: European Journal of Anaesthesiology; Apr 2018; vol. 35 (no. 4); p. 266-272
Publication Date: Apr 2018
Publication Type(s): Article
Abstract:BACKGROUND In recent decades, the incidences of anaesthesia-related perioperative mortality and adverse outcomes have decreased drastically. However, to date, data on perioperative cardiac arrest and risk factors of perioperative cardiac arrest from European countries are scarce. OBJECTIVES To determine the incidences of perioperative cardiac arrest and rates of anaesthesia-related and anaesthesia-contributory cardiac arrest. Identification of pre-existing risk factors leading to perioperative cardiac arrest. DESIGN Retrospective cohort study. SETTING Department of Anaesthesiology and Intensive Care Medicine, University Hospital of Cologne, Germany. INTERVENTIONS Perioperative critical incident reports between 2007 and 2012 were screened, and reports on cardiac arrest within 24 h postoperatively were identified. Cardiac arrests were classified as 'anaesthesia-related', 'anaesthesia-contributory' or 'anaesthesia-unrelated' by two reviewers independently. Univariate and multi-variate logistic regression analysis was used to identify risk factors associated with perioperative cardiac arrest. RESULTS Analysis of 318 critical incidents from 169 500 anaesthetics revealed 99 perioperative cardiac arrests. This is an overall incidence of perioperative cardiac arrest of 5.8/10 000 anaesthetics [95% confidence interval (CI), 4.7 to 7.0]. The rate of anaesthesia-related cardiac arrest was 0.7/10 000 (95% CI, 0.3 to 1.1), and the rate of anaesthesia-contributory cardiac arrest was 1.7/10 000 (95% CI, 1.1 to 2.3). Most cardiac arrests related to anaesthesia were due to respiratory events. From the multi-variate analysis, American Society of Anesthesiologists physical status grade at least 3 [P =

0.007, odds ratio (OR) 2.59 (95% CI, 1.29 to 5.19)], emergency surgery [P < 0.001, OR 4.00 (95% CI, 2.15 to 7.54)] and pre-existing cardiomyopathy [P < 0.001, OR 17.48 (95% CI, 6.18 to 51.51)] emerged as predictors of cardiac arrest. CONCLUSION These first available European data on perioperative cardiac arrest from a large unselected cohort indicate that the overall perioperative incidence of cardiac arrest at our institution was slightly lower than published in the literature, whereas rates of anaesthesia-related and anaesthesia-contributory cardiac arrest were comparable. Most cardiac arrests related to anaesthesia were due to respiratory events. American Society of Anesthesiologists physical status grade at least 3, emergency surgery and pre-existing cardiomyopathy appear to be relevant risk factors for cardiac arrest.

Comparative outcomes of combined corticosteroid with low volume compared to high volume of local anesthetic in subacromial injection for impingement syndrome: systematic review and meta-analysis of RCTs

Author(s): Sumanont S.; Boonard M.; Peradhammanon E.; Arirachakaran A.; Suwankomonkul P.; Oungbumrungpan W.; Kongtharvonskul J.

Source: European Journal of Orthopaedic Surgery and Traumatology; Apr 2018; vol. 28 (no. 3); p. 397-407

Publication Date: Apr 2018

Publication Type(s): Article

Abstract: Subacromial impingement syndrome (SIS) is one of the most frequent pathologies of the shoulder, which may cause serious restriction of daily activities and lifestyle changes. Corticosteroid injection (CI) into the subacromial space is a palliative treatment option. Currently, there have been no studies that compare between the different volumes of CI injection. We have conducted a systematic review and meta-analysis to answer our specific study questions: Are high volume (< 5 ml) better than low volume (>= 5 ml) of CI injection with respect to pain reduction? This systematic review was conducted according to the preferred reporting items for systematic reviews and meta-analyses guidelines. Relevant studies were identified from Medline and Scopus from inception to May 11, 2017 that reported American shoulder and elbow surgeons (ASES) function score, pain visual analog score (VAS), and postoperative complications of either group. Fifteen studies were included for the analysis of high volume (more than or equal 5 ml), and 5 studies were included for analysis of low volume (less than 5 ml). Overall, there were 1101 patients (732 in the high-volume group and 369 in the low-volume group). A pooling of mean VAS and ASES function score was (N = 557) 2.02 (95% CI 1.52, 2.53), (N = 190) 82.59 (95% CI 76.92, 88.27) in high-volume group and (N = 179) 2.60 (95% CI 1.94, 3.26), (N = 95) 84.65 (95% CI 81.64, 86.82) in low-volume group, respectively. The unstandardized mean difference of ASES and VAS of high volume was - 0.58 (95% confidence interval (CI): - 1.38, 0.22) and - 2.06 (95% CI - 8.35, 4.23) scores lower than low-volume CI in SIS patients, but without statistical significance. A total of 11 studies in the high-volume group and 4 studies in the low-volume group reported adverse effects. The total complication rate per patient was 6.2% (2.3, 10.1%) in the high-volume group and 11.7% (0.3, 12%) in the low-volume group (p = 0.091). No significant differences were noted for complications. In subacromial impingement syndrome, the corticosteroid injection had acceptable pain and functional outcomes. Higher volume had a lower ASES, VAS, and risk of having complication when compared to lower volume. However, there are no statistically significant differences between groups. Larger, randomized noninferiority or equivalent trial studies are needed to confirm these findings as the current literature is still insufficient. Level of evidence I.

Subthalamic deep brain stimulation under general anesthesia and neurophysiological guidance while on dopaminergic medication: comparative cohort study

Author(s): Asha M.J.; Fisher B.; Kausar J.; Garratt H.; White A.; Chelvarajah R.; Ughratdar I.; Mitchell R.D.; Krovvidi H.; Shirley C.; Hodson J.A.; Pall H.

Source: Acta Neurochirurgica; Apr 2018; vol. 160 (no. 4); p. 823-829

Publication Date: Apr 2018

Publication Type(s): Article

Available at Acta neurochirurgica - from International DOI Foundation

Abstract: Objectives: The authors have previously reported on the technical feasibility of subthalamic nucleus deep brain stimulation (STN DBS) under general anesthesia (GA) with microelectrode recording (MER) guidance in Parkinsonian patients who continued dopaminergic therapy until surgery. This paper presents the results of a prospective cohort analysis to verify the outcome of the initial study, and report on wider aspects of clinical outcome and postoperative recovery. Methods: All patients in the study group continued dopaminergic therapy until GA was administered. Baseline characteristics, intraoperative neurophysiological

markers, and perioperative complications were recorded. Long-term outcome was assessed using selective aspects of the unified Parkinson's disease rating scale motor score. Immediate postoperative recovery from GA was assessed using the "time needed for extubation" and "total time of recovery." Data for the "study group" was collected prospectively. Examined variables were compared between the "study group" and "historical control group" who stopped dopaminergic therapy preoperatively. Results: The study group, n = 30 (May 2014-Jan 2016), were slightly younger than the "control group," 60 (51-64) vs. 64 (56-69) years respectively, p = 0.043. Both groups were comparable for the recorded intraoperative neurophysiological parameters; "number of MER tracks": 60% of the "study group" had single track vs. 58% in the "control" group, p = 1.0. Length of STN MER detected was 9 vs. 7 mm (median) respectively, p = 0.037. A trend towards better recovery from GA in the study group was noted, with shorter "total recovery time": 60 (50-84) vs. 89 (62-120) min, p = 0.09. Long-term improvement in motor scores and reduction in l-dopa daily equivalent dose were equally comparable between both groups. No cases of dopamine withdrawal or problems with immediate postop dyskinesia were recorded in the "on medications group." The observed rate of dopamine-withdrawal side effects in the "off-medications" group was 15%. Conclusions: The continuation of dopaminergic treatment for patients with PD does not affect the feasibility/outcome of the STN DBS surgery. This strategy appears to reduce the risk of dopamine-withdrawal adverse effects and may improve the recovery in the immediate postoperative period, which would help enhance patients' perioperative experience.

Multimodal analgesia decreases opioid consumption after shoulder arthroplasty: a prospective cohort study
Author(s): McLaughlin D.C.; Cheah J.W.; Zhang A.L.; Ma C.B.; Feeley B.T.; Aleshi P.
Source: Journal of Shoulder and Elbow Surgery; Apr 2018; vol. 27 (no. 4); p. 686-691
Publication Date: Apr 2018
Publication Type(s): Article
Abstract: Background: Studies on perioperative pain control in shoulder arthroplasty focus on regional anesthesia, with little research on other approaches. Perioperative multimodal analgesia regimens decrease opioid intake and opioid-related side effects in lower-extremity arthroplasty. In this study we compare pain scores, opioid consumption, length of stay, and readmission rates in postoperative shoulder arthroplasty patients treated with a standard or multimodal analgesia regimen. Methods: A prospective cohort analysis was performed at a single institution. Patients undergoing elective shoulder arthroplasty were treated with either a standard opioid-based regimen or a multimodal analgesia regimen perioperatively. Outcome measures included inpatient pain scores, opioid use, length of stay, and 30- and 90-day emergency department visits and readmission rates. Results: Seventy-five patients were included in each cohort. Patients treated with the multimodal analgesia regimen had lower postoperative day 0 pain scores (mean, 1.5 vs 2.2; P =.027). Opioid use in the multimodal cohort was lower on all days: 47% lower on postoperative day 0, 37% on day 1, and 44% on day 2 (all P <.01). The length of inpatient stay was significantly shorter for multimodal patients than for patients treated with the standard regimen (1.44 days vs 1.91 days, P <.01). There was no difference in the rate of 30- or 90-day emergency department visits or readmission. Conclusion: Patients undergoing shoulder arthroplasty have decreased postoperative pain and opioid consumption and shorter hospital stays when given a multimodal analgesia regimen. There is no increase in short-term complications or unplanned readmissions, indicating that this is a safe and effective means to control postoperative pain.

Endovascular Mechanical Thrombectomy for Acute Ischemic Stroke Under General Anesthesia Versus Conscious Sedation: A Systematic Review and Meta-Analysis
Author(s): Ilyas A.; Foreman P.M.; Chen C.-J.; Buell T.J.; Taylor D.G.; Kalani M.Y.; Park M.S.; Ding D.; Ironside N.; Southerland A.M.; Worrall B.B.
Source: World Neurosurgery; Apr 2018; vol. 112
Publication Date: Apr 2018
Publication Type(s): Article
Abstract: Background: Endovascular mechanical thrombectomy (EMT) is the standard of care for eligible patients presenting with anterior circulation acute ischemic stroke (AIS) due to emergent large vessel occlusion (ELVO). The aim of this systematic review and meta-analysis is to compare the outcomes between patients undergoing general anesthesia (GA) versus conscious sedation (CS) for these procedures. Methods: A literature review was performed to identify studies reporting the EMT outcomes of AIS patients who underwent GA or CS for the procedure. Baseline, treatment, and outcomes data were analyzed. Good outcome was defined as a modified Rankin Scale score of 0-2 at 3 months, and successful reperfusion was defined as modified

thrombolysis in cerebral infarction grade of 2b-3. Results: Nine studies, comprising a total of 1379 patients treated with GA (n = 761) or CS (n = 618) for EMT, were included. Based on pooled data, GA achieved good outcome in 35% and successful reperfusion in 81%, whereas CS achieved good outcome in 41% and successful reperfusion in 75%. Meta-analyses showed no significant differences in the rates of good outcome (P = 0.51) or successful reperfusion (P = 0.39) between the GA and CS groups. The rates of pneumonia were significantly higher in the GA group (21% vs. 11%; P = 0.01). Conclusions: The use of either GA or CS during EMT for patients with anterior circulation acute ELVO does not yield significantly different rates of functional independence at 3 months.

Hyperbaric vs. isobaric bupivacaine for spinal anaesthesia for elective caesarean section: a Cochrane systematic review
Author(s): Sng B.L.; Leong W.L.; Tan K.H.; Sia A.T.; Han N.L.R.; Sultana R.; Siddiqui F.J.; Assam P.N.; Chan E.S.
Source: Anaesthesia; Apr 2018; vol. 73 (no. 4); p. 499-511
Publication Date: Apr 2018
Publication Type(s): Review
Abstract: Both isobaric and hyperbaric bupivacaine have been used for spinal anaesthesia for elective caesarean section, but it is not clear if one is better than the other. The primary objective of this systematic review was to determine the effectiveness and safety of hyperbaric bupivacaine compared with isobaric bupivacaine administered during spinal anaesthesia for elective caesarean section. We included 10 studies with 614 subjects in the analysis. There was no evidence of differences either in the risk of conversion to general anaesthesia, with a relative risk (95%CI) of 0.33 (0.09-1.17) (very low quality of evidence), or in the need for supplemental analgesia, the relative risk (95%CI) being 0.61 (0.26-1.41) (very low quality of evidence). There was also no evidence of a difference in the use of ephedrine, the amount of ephedrine used, nausea and vomiting, or headache. Hyperbaric bupivacaine took less time to reach a sensory block height of T4, with a mean difference (95%CI) of -1.06 min (-1.80 to -0.31). Due to the rarity of some outcomes, dose variability, use of adjuvant drugs and spinal technique used, future clinical trials should look into using adequate sample size to investigate the primary outcome of the need for supplemental analgesia.

Perioperative Outcomes after Regional Versus General Anesthesia for Above the Knee Amputations
Author(s): Pisansky A.J.B.; Brovman E.Y.; Urman R.D.; Kuo C.; Kaye A.D.
Source: Annals of Vascular Surgery; Apr 2018; vol. 48 ; p. 53-66
Publication Date: Apr 2018
Publication Type(s): Article
Abstract: Background: Nontraumatic lower extremity amputation (LEA) remains a common procedure among patients who frequently have significant comorbidities. Patients undergoing above knee amputation (AKA) have the highest rates of mortality in this cohort, yet there is little evidence to support selection between peripheral nerve block or neuraxial regional anesthesia (RA) versus general anesthesia (GA) techniques. The objective of this study was to determine whether RA (neuraxial or peripheral nerve block) techniques were associated with more favorable outcomes versus general anesthesia among patients undergoing AKA. Methods: This is a retrospective cohort study using propensity-matched groups. Patients undergoing AKA were identified in the American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) data set and grouped according to anesthetic type as either RA or GA. Patients undergoing AKA with RA were propensity matched to similar patients who had GA. Primary outcome was 30-day mortality. Secondary outcomes were numerous and included cardiac, pulmonary, infectious, and bleeding complications, as well as length of stay. Among a subset of patients for whom readmission data were available, rate of readmission was compared as a secondary outcome. Results: Nine thousand nine hundred ninety-nine patients were identified in the ACS-NSQIP database. One thousand three hundred twelve received a regional anesthetic, and the remainder had a general anesthetic. Factors significantly associated with GA included younger age (70 vs. 75 years; P < 0.001), higher body mass index (26.5 vs. 25.4; P < 0.001), and ethnically white (62.4% vs. 57%; P < 0.001). Before matching, patients receiving RA were less likely to be smokers (22% vs. 29%; P < 0.001), have a bleeding disorder (15% vs 30%; P < 0.001), or have a diagnosis of sepsis (26% vs 34%; P < 0.001). Propensity score matching produced a cohort composed of 1,916 patients equally divided between RA and GA. We found no difference with respect to the primary end point of 30-day mortality (11.7% vs 11.7%; odds ratio [OR] 1.01; P = 0.943) nor was there any difference with respect to secondary outcomes. Among patients for whom readmission data were available, there was no statistically significant difference between rates of readmission between the groups (15.6% for RA vs. 12.7% for GA; OR 1.26, confidence interval 0.87-1.828, P = 0.221).

Conclusions: The present investigation did not detect any difference between regional and general anesthetic with respect to morbidity or mortality among patients undergoing AKA. This data set did not allow us to address other relevant markers including pain control or phantom limb syndrome.

A randomised controlled trial comparing needle movements during combined spinal-epidural anaesthesia with and without ultrasound assistance
Author(s): Chin A.; Crooke B.; Heywood L.; Brijball R.; Abeypala W.; Pelecanos A.M.
Source: Anaesthesia; Apr 2018; vol. 73 (no. 4); p. 466-473
Publication Date: Apr 2018
Publication Type(s): Article
Abstract: Ultrasound assistance for neuraxial techniques may improve technical performance; however, it is unclear which populations benefit most. Our study aimed to investigate the efficacy of neuraxial ultrasound in women having caesarean section with combined spinal-epidural anaesthesia, and to identify factors associated with improved technical performance. Two-hundred and eighteen women were randomly allocated to ultrasound-assisted or control groups. All the women had a pre-procedure ultrasound, but only women in the ultrasound group had this information conveyed to the anaesthetist. Primary outcomes were first-pass success (a single needle insertion with no redirections) and procedure difficulty. Secondary outcomes were block quality, patient experience and complications. Exploratory sub-group analysis and regression analysis were used to identify factors associated with success. Data from 215 women were analysed. First-pass success was achieved in 67 (63.8%) and 42 (38.2%) women in the ultrasound and control groups, respectively (adjusted p = 0.001). Combined spinal-epidural anaesthesia was 'difficult' in 19 (18.1%) and 33 (30.0%) women in the ultrasound and control groups, respectively (adjusted p = 0.09). Secondary outcomes did not differ significantly. Anaesthetists misidentified the intervertebral level by two or more spaces in 23 (10.7%) women. Sub-group analysis demonstrated a benefit for ultrasound in women with easily palpable spinous processes (adjusted p = 0.027). Regression analysis identified use of ultrasound and easily palpable spinous processes to be associated with first-pass success.

A Randomized Non-Inferiority Trial of Adductor Canal Block for Analgesia After Total Knee Arthroplasty: Single Injection Versus Catheter Technique
Author(s): Lee S.; Rooban N.; Vaghadia H.; Sawka A.N.; Tang R.
Source: Journal of Arthroplasty; Apr 2018; vol. 33 (no. 4); p. 1045-1051
Publication Date: Apr 2018
Publication Type(s): Article
Abstract: Background: Adductor canal blocks (ACBs) provide effective analgesia following total knee arthroplasty. We hypothesized that ACB single injection plus intravenous (IV) dexamethasone (Dex) shows non-inferiority to catheter, while ACB single injection does not. Methods: One hundred eighty patients were randomized and 177 analyzed from among 1 of 3 ACB interventions: (1) 0.5% ropivacaine 20 mL; (2) 0.5% ropivacaine 20 mL plus IV Dex 8 mg; (3) 0.5% ropivacaine 20 mL followed by continuous infusion of 0.2% ropivacaine at 5 mL/h for 48 hours. The primary endpoint was cumulative opioid consumption at 24 hours in oral morphine equivalents, with a non-inferiority limit of 30 mg. Secondary endpoints included opioid consumption at 12 and 48 hours, rest pain scores, quality of recovery survey, length of stay, and anti-emetic usage. Results: For 24-hour opioid consumption, single injection ACB with and without IV Dex had a mean difference of -24.2 mg (confidence interval [CI] 0.5 to -48.9, P <.001) and -21 mg (CI 3.2 to -45.1, P <.001) relative to catheter, demonstrating non-inferiority. Non-inferiority was also shown at 12 hours by Dex and single injection over catheter with mean difference of -20.4 mg (CI -6.8 to -33.9, P <.001) and -15.1 mg (CI -2.1 to -28.2, P <.001), respectively. No intergroup difference was found for 48-hour opioid consumption. No differences in other secondary outcomes were observed across the 3 groups. Conclusion: Single injection ACB, with and without IV Dex, is non-inferior to ACB catheters in 24-hour opioid consumption, and may be attractive options for early-discharge, fast-track total knee arthroplasty.

Continuous Adductor Canal Blocks Provide Superior Ambulation and Pain Control Compared to Epidural Analgesia for Primary Knee Arthroplasty: A Randomized, Controlled Trial
Author(s): Kayupov E.; Okroj K.; Luchetti T.J.; Gerlinger T.L.; Della Valle C.J.; Young A.C.; Moric M.; Zisman G.; Buvanendran A.
Source: Journal of Arthroplasty; Apr 2018; vol. 33 (no. 4); p. 1040

Publication Date: Apr 2018
Publication Type(s): Article
Abstract: Background: Adductor canal blocks (ACBs) are an alternative to femoral nerve blocks that minimize lower extremity weakness. However, it is unclear whether this block will provide analgesia that is equivalent to techniques, such as epidural analgesia. The purpose of this randomized controlled trial was to compare continuous ACBs with epidural analgesia for primary total knee arthroplasty. Methods: Following institutional review board approval, 145 patients were randomized to 1 of 3 groups: combined spinal-epidural (CSE), spinal + continuous ACB (CACB), or general + CACB. Epidural analgesia was used postoperatively in the CSE group, and an adductor canal catheter was used in the CACB groups. Power analysis determined that 84 patients per group were needed to demonstrate a 35% increase in ambulation with an alpha of 0.05 at a power of 90%. Results: At interim analysis, 13 patients were removed for protocol deviations, leaving 45 in CSE, 41 in spinal + CACB and 46 in general + CACB groups. Patient demographics were similar in all comparisons suggesting appropriate randomization. Patients in the CACB groups walked further on postoperative day 1, 2, and 3 (P =.02). Mean daily pain scores were lower in the CACB groups (4.1 CSE, 3.0 spinal + CACB, 3.4 general + CACB, P =.009). There was no significant difference in total opioid consumption between groups (158 morphine equivalents CSE, 149 spinal + CACB, and 172 general + CACB). More patients reported being "very satisfied" in CACB groups (68% general + CACB, 63% spinal + CACB, and 36% CSE; P =.001). Conclusion: Continuous adductor analgesia provides superior ambulation, lower pain scores, faster discharge, and greater patient satisfaction when compared to epidural analgesia for primary total knee arthroplasty.

The efficacy of dexamethasone reducing postoperative pain and emesis after total knee arthroplasty: A systematic review and meta-analysis
Author(s): Fan Z.; Ma J.; Kuang M.; Zhang L.; Han B.; Yang B.; Wang Y.; Ma X.
Source: International Journal of Surgery; Apr 2018; vol. 52 ; p. 149-155
Publication Date: Apr 2018
Publication Type(s): Review
Abstract: Background: Total knee arthroplasty (TKA) is gradually emerging as the treatment of choice for end-stage osteoarthritis. In the past, Perioperative dexamethasone treatment is still a controversial subject in total knee arthroplasty. Therefore, we write this systematic review and meta-analysis to evaluate the efficacy of dexamethasone on pain and recovery after Total knee Arthroplasty. Materials and methods: Embase, Pubmed, and Cochrane Library were comprehensively searched. Randomized controlled trials, cohort studies were included in our meta-analysis. Eight studies that compared dexamethasone groups with placebo groups were included in our meta-analysis. The research was reported according to the preferred reporting items for systematic reviews and meta-analysis (PRISMA) guidelines. Randomized controlled trials were included in our meta-analysis. Results: Our study demonstrated that the dexamethasone group was more effective than the placebo group in term of VAS score at 24 h($P < 0.00001$), 48 h($P = 0.0002$); Opioid consumption ($P < 0.00001$); postoperative nausea ($P < 0.00001$); and Inflammatory factors of CPR at 24 h ($P = 0.003$). Conclusion: Our meta-analysis demonstrated that dexamethasone decreased postoperative pain, the incidence of POVN, and total opioid consumption effectively which played a critical role in rapid recovery to TKA. However, we still need large sample size, high quality studies to explore the relationship between complications and dose response to give the final conclusion.

Subacromial Local Anesthetics Do Not Interfere With Rotator Cuff Healing After Arthroscopic Repair.
Author(s): Rhee, Sung-Min; Chung, Nam Yun; Jeong, Hyeon Jang; Oh, Joo Han
Source: The American journal of sports medicine; Apr 2018; vol. 46 (no. 5); p. 1097-1105
Publication Date: Apr 2018
Publication Type(s): Journal Article
PubMedID: 29470095
Abstract:BACKGROUNDSubacromial pain pumps are used for analgesia after arthroscopic rotator cuff surgery. However, there is controversy about myotoxic or tendinotoxic effects of local anesthetics.HYPOTHESISRopivacaine administered via a subacromial pain pump would have no adverse effect on rotator cuff tendon healing, fatty degeneration, strength, or functional outcomes after arthroscopic repair.STUDY DESIGNCohort study; Level of evidence, 3.METHODSThis study continues follow-up of patients enrolled in the authors' 3 published prospective studies regarding pain control after arthroscopic rotator cuff repair. In total, 118 patients who underwent rotator cuff repair and returned for evaluation at least 1 year postoperatively were divided into 3 groups: patients who received continuous subacromial ropivacaine

infusion (group 1, n = 33), those who received patient-controlled subacromial ropivacaine infusion (group 2, n = 30), and those who received other pain control modalities (intravenous patient-controlled analgesia and/or interscalene block; group 3, n = 55). At least 1 year postoperatively, tendon healing and changes in global fatty degeneration index (GFDI) were estimated through computed tomographic arthrography, magnetic resonance imaging, or ultrasonography. Changes in isokinetic muscle performance test (IMPT) were calculated and functional outcomes evaluated, including visual analog scales (VASs) for pain and satisfaction, American Shoulder and Elbow Surgeons score, and Constant score.RESULTSAt final follow-up, there were no differences in pain VAS (group 1, 1.1 ± 2.3; group 2, 1.3 ± 1.9; group 3, 0.9 ± 1.7; P = .88), satisfaction VAS (group 1, 8.3 ± 2.4; group 2, 8.7 ± 1.5; group 3, 8.0 ± 2.1; P = .64), American Shoulder and Elbow Surgeons score (group 1, 79.5 ± 10.5; group 2, 81.1 ± 6.9; group 3, 75.7 ± 7.6; P = .34), or Constant score (group 1, 81.8 ± 8.7; group 2, 77.6 ± 9.3; group 3, 78.2 ± 8.4; P = .31). Among the 3 groups, there were no significant differences in healing rates (group 1, 72.7%; group 2, 73.3%; group 3, 70.9%; P = .83) and no differences in changes of GFDI (group 1, 0.45; group 2, 0.62; group 3, 0.41; P = .79), and IMPT (abduction: group 1, 113.0%; group 2, 121.5%; group 3, 120.1%; P = .73; external rotation: group 1, 112.1%; group 2, 121.6%; group 3, 111.7%; P = .71; internal rotation: group 1, 118.2%; group 2, 118.0%; group 3, 118.1%; P = .95). When data were reanalyzed with 2 groups (group 1 + 2 vs group 3), there were no significant differences in functional scores, healing rates, or changes in GFDI and IMPT (P > .05).CONCLUSIONCurrent data suggest that myotoxicity of subacromial ropivacaine administered via pain pump may be reversible or may not be so severe as to interfere with tendon healing and cause muscle degeneration and thus may not affect postoperative function.

Randomized Clinical Trial of Lidocaine Analgesia for Transurethral Bladder Catheterization Delivered via Blunt Tipped Applicator in Young Children.
Author(s): Uspal, Neil G; Strelitz, Bonnie; Gritton, Jesse; Follmer, Kristin; Bradford, Miranda C; Colton, Taryn L; Merguerian, Paul A; Klein, Eileen J
Source: Pediatric emergency care; Apr 2018; vol. 34 (no. 4); p. 273-279
Publication Date: Apr 2018
Publication Type(s): Journal Article
Abstract:OBJECTIVETransurethral bladder catheterization (TUBC) is a painful, frequently performed procedure for collecting sterile urine. We sought to determine if administration of intraurethral lidocaine before TUBC using a blunt tipped syringe decreases procedural pain in young children in the pediatric emergency department.METHODSRandomized clinical trial of children 0 to 36 months old requiring TUBC for collection of urine in a pediatric emergency department was performed. Patients received intraurethral 2% lidocaine jelly or usual care (no analgesia). Randomization was stratified by sex. Intraurethral lidocaine jelly was administered via Uro-Jet, 5 minutes before TUBC. Baseline child state, lidocaine application, TUBC, and child state 1 minute post-TUBC were videotaped. Neither providers nor parents were blinded to study arm. Videos were scored by a trained, independent, blinded reviewer using the Faces, Legs, Arms, Cry, and Consolability (FLACC) and Modified Behavioral Pain Score scales. Pain scores were compared using the Wilcoxon rank sum test. Our primary outcome was difference in FLACC scores between groups.RESULTSEighty children were enrolled in the study, and 73 had analyzable data. No differences were detected in pain by mean FLACC score between intervention (8; 95% confidence interval, 7-9) and control (9; 95% confidence interval, 8-10) groups. There were no differences between groups in mean FLACC score when stratified by age or sex or in mean Modified Behavioral Pain Score.CONCLUSIONSIntraurethral lidocaine for TUBC for urine collection using a blunt tipped applicator did not improve procedural pain scores. Pain scores were high across groups. Further study should be performed to improve analgesia for this highly painful procedure.

Epidural Analgesia During the Second Stage of Labor: A Randomized Controlled Trial.
Author(s): Illuzzi, Jessica L; Greenberg, Jessica T; Mancini, Peter A
Source: Obstetrics and gynecology; Apr 2018; vol. 131 (no. 4); p. 742
Publication Date: Apr 2018
Publication Type(s): Journal Article
Available at Obstetrics and gynecology - from Ovid (Journals @ Ovid) - Remote Access

The Anesthetic Efficacy of Articaine and Lidocaine in Equivalent Doses as Buccal and Non-Palatal Infiltration for Maxillary Molar Extraction: A Randomized, Double-Blinded, Placebo-Controlled Clinical Trial.
Author(s): Majid, Omer Waleed; Ahmed, Aws Mahmood
Source: Journal of oral and maxillofacial surgery : official journal of the American Association of Oral and Maxillofacial Surgeons; Apr 2018; vol. 76 (no. 4); p. 737-743

Publication Date: Apr 2018
Publication Type(s): Journal Article
Abstract:PURPOSEThe purpose of the present study was to evaluate the anesthetic adequacy of 4% articaine 1.8 mL versus 2% lidocaine 3.6 mL without palatal injection compared with the standard technique for the extraction of maxillary molar teeth.MATERIALS AND METHODSThis randomized, double-blinded, placebo-controlled clinical trial included patients requiring extraction of 1 maxillary molar under local anesthesia. Patients were randomly distributed into 1 of 3 groups: group A received 4% articaine 1.8 mL as a buccal injection and 0.2 mL as a palatal injection, group B received 4% articaine 1.8 mL plus normal saline 0.2 mL as a palatal injection, and group C received 2% lidocaine 3.6 mL plus normal saline 0.2 mL as a palatal injection. Pain was measured during injection, 8 minutes afterward, and during extraction using a visual analog scale. Initial palatal anesthesia and patients' satisfaction were measured using a 5-score verbal rating scale. Statistical analyses included descriptive statistics, analysis of variance, and Pearson $\chi 2$ test. Differences with a P value less than .05 were considered significant.RESULTSEighty-four patients were included in the study. The average pain of injection was comparable among all study groups (P = .933). Pain during extraction in the articaine group was significantly less than that experienced in the placebo groups (P < .001), although the differences between placebo groups were insignificant. Satisfaction scores were significantly higher in the articaine group compared with the placebo groups (P < .001), with comparable results between placebo groups.CONCLUSIONSAlthough the anesthetic effects of single placebo-controlled buccal injections of 4% articaine and 2% lidocaine were comparable, the level of anesthetic adequacy was statistically less than that achieved by 4% articaine given by the standard technique. These results do not justify the buccal and non-palatal infiltration of articaine or lidocaine as an effective alternative to the standard technique in the extraction of maxillary molar teeth.

A Comparison of Regional Versus General Anesthesia for Lumbar Spine Surgery: An Untouched Aspect of the Meta-Analysis.
Author(s): Kaloria, Narender; Bihani, Pooja; Bhatia, Pradeep; Paliwal, Bharat; Sharma, Ankur
Source: Journal of neurosurgical anesthesiology; Apr 2018; vol. 30 (no. 2); p. 191
Publication Date: Apr 2018
Publication Type(s): Journal Article

1% Versus 2% Lignocaine for Airway Anesthesia in Flexible Bronchoscopy Without Lignocaine Nebulization (LIFE): A Randomized Controlled Trial.
Author(s): Madan, Karan; Biswal, Shiba K; Mittal, Saurabh; Hadda, Vijay; Mohan, Anant; Khilnani, Gopi C; Pandey, Ravindra M; Guleria, Randeep
Source: Journal of bronchology & interventional pulmonology; Apr 2018; vol. 25 (no. 2); p. 103-110
Publication Date: Apr 2018
Publication Type(s): Journal Article
PubMedID: 29346249
Abstract:BACKGROUNDThe ideal concentration of lignocaine for topical anesthesia in bronchoscopy remains investigational. In this randomized, double blind study, we compared 1% versus 2% lignocaine for topical anesthesia.METHODSConsecutive patients undergoing bronchoscopy were randomized to receive either 1% or 2% lignocaine solution by spray-as-you-go technique. All received 10% lignocaine spray to the oropharynx along with nasal 2% lignocaine gel. Nebulized lignocaine was not administered. Primary outcomes were operator-rated overall procedural satisfaction, visual analogue scale (VAS)-rated and operator-rated cough, VAS. Secondary objectives were total lignocaine dose administered, patient-rated pain on faces pain scale, cumulative dose of lignocaine and procedural complications.RESULTSA total of 500 patients (250 in each group) were randomized. Baseline characteristics were comparable. Operator-rated overall procedural satisfaction, VAS (72.05±20.16 and 72.20±21.96 in 1% and 2% group respectively; P=0.93) and operator-rated cough, VAS [1% group: 19.1 (12.6-34.6) and 2% group: 20.6 (12.5-36.9); P>0.05] were similar between the 2 groups. Cumulative dose of lignocaine used in 2% lignocaine group was greater (220.89±12.96 mg in 1% and 319.55±19.32 mg in 2% group; P<0.001). Patients receiving sedation were comparable between the 2 groups. (10% in 1% lignocaine group and 6% in 2% lignocaine group; P=0.13). Minor complications occurred in 2 patients in each group.CONCLUSIONOne percent lignocaine in flexible bronchoscopy is as efficacious as 2% lignocaine when administered using the spray as you go technique without concurrent lignocaine nebulization, at a significantly lower total dose of lignocaine administered.

Factors predictive of the onset and duration of action of local anesthesia in mandibular third-molar surgery: a prospective study.
Author(s): Al-Shayyab, Mohammad H; Baqain, Zaid H
Source: European journal of oral sciences; Apr 2018; vol. 126 (no. 2); p. 110-117
Publication Date: Apr 2018
Publication Type(s): Journal Article
Abstract: The aim of this study was to assess the influence of patients' and surgical variables on the onset and duration of action of local anesthesia (LA) in mandibular third-molar (M3) surgery. Patients scheduled for mandibular M3 surgery were considered for inclusion in this prospective cohort study. Patients' and surgical variables were recorded. Two per cent (2%) lidocaine with 1:100,000 epinephrine was used to block the nerves for extraction of mandibular M3. Then, the onset of action and duration of LA were monitored. Univariate analysis and multivariate regression analysis were used to analyze the data. The final cohort included 88 subjects (32 men and 56 women; mean age ± SD = 29.3 ± 12.3 yr). With univariate analysis, age, gender, body mass index (BMI), smoking quantity and duration, operation time, and 'volume of local anesthetic needed' significantly influenced the onset of action and duration of LA. Multivariate regression revealed that age and smoking quantity were the only statistically significant predictors of the onset of action of LA, whereas age, smoking quantity, and 'volume of local anesthetic needed' were the only statistically significant predictors of duration of LA. Further studies are recommended to uncover other predictors of the onset of action and duration of LA.

Comparing peri-operative complications of paediatric and adult anaesthesia: A retrospective cohort study of 81 267 cases.
Author(s): Westerkamp, Andrie C; de Geus, A Fred; Molenbuur, Bouwe; Meyer, Peter; Wietasch, J K Götz; Struys, Michel M R F; Hendriks, Herman G D
Source: European journal of anaesthesiology; Apr 2018; vol. 35 (no. 4); p. 280-288
Publication Date: Apr 2018
Publication Type(s): Journal Article
Abstract:BACKGROUNDComparisons of peri-operative complications associated with paediatric (≤16 years) and adult anaesthesia are poorly available, especially in which cardiac surgery, organ transplantation and neurosurgery are involved.OBJECTIVEThe aim of this study was to evaluate the nature and incidence of peri-operative complications that might be due to anaesthesia and to identify independent risk factors for complications in children and adults, including those undergoing cardiac surgery, organ transplantation and neurosurgery.DESIGNRetrospective cohort study.SETTINGThe study was performed at the University Medical Centre Groningen in the 4 years between 1 January 2010 and the 31 December 2013.MAIN OUTCOME MEASURESComplications and their severity were graded according to the standard complication score (20 items) of the Dutch Society of Anaesthesia. Univariate and multivariate regression analysis was used to identify independent risk factors for the reported complications.RESULTSA total of 81 267 anaesthetic cases were included. In the paediatric cohort, there were 410 (2.9%) complications and 1675 (2.5%) in the adults. In both cohorts age, American Society of Anaesthesiologists classification and emergency treatment were independent risk factors for complications. With respect to age, infants less than 1 year were at the highest risk, whereas in the adult cohort, increased age was related to a greater number of complications. The incidences of the specific complications were different between both cohorts. Upper airway obstruction was more frequently observed in paediatric patients (26%), whereas in the adults, complications with the highest incidence concerned conversion of regional-to-general anaesthesia (25%) and hypotension (17%).CONCLUSIONRisk factors for all peri-operative complications were similar for paediatric and adult anaesthesia. However, the incidence of specific complications differed between both age categories.
Database: Medline

Incidence and risk factors of anaesthesia-related perioperative cardiac arrest: A 6-year observational study from a tertiary care university hospital.
Author(s): Hohn, Andreas; Machatschek, Jan-Nicolas; Franklin, Jeremy; Padosch, Stephan A
Source: European journal of anaesthesiology; Apr 2018; vol. 35 (no. 4); p. 266-272
Publication Date: Apr 2018
Publication Type(s): Journal Article
Abstract:BACKGROUNDIn recent decades, the incidences of anaesthesia-related perioperative mortality and adverse outcomes have decreased drastically. However, to date, data on perioperative cardiac arrest and risk factors of perioperative cardiac arrest from European countries are scarce.OBJECTIVESTo determine the

incidences of perioperative cardiac arrest and rates of anaesthesia-related and anaesthesia-contributory cardiac arrest. Identification of pre-existing risk factors leading to perioperative cardiac arrest.DESIGNRetrospective cohort study.SETTINGDepartment of Anaesthesiology and Intensive Care Medicine, University Hospital of Cologne, Germany.INTERVENTIONSPerioperative critical incident reports between 2007 and 2012 were screened, and reports on cardiac arrest within 24 h postoperatively were identified. Cardiac arrests were classified as 'anaesthesia-related', 'anaesthesia-contributory' or 'anaesthesia-unrelated' by two reviewers independently. Univariate and multi-variate logistic regression analysis was used to identify risk factors associated with perioperative cardiac arrest.RESULTSAnalysis of 318 critical incidents from 169 500 anaesthetics revealed 99 perioperative cardiac arrests. This is an overall incidence of perioperative cardiac arrest of 5.8/10 000 anaesthetics [95% confidence interval (CI), 4.7 to 7.0]. The rate of anaesthesia-related cardiac arrest was 0.7/10 000 (95% CI, 0.3 to 1.1), and the rate of anaesthesia-contributory cardiac arrest was 1.7/10 000 (95% CI, 1.1 to 2.3). Most cardiac arrests related to anaesthesia were due to respiratory events. From the multi-variate analysis, American Society of Anesthesiologists physical status grade at least 3 [P = 0.007, odds ratio (OR) 2.59 (95% CI, 1.29 to 5.19)], emergency surgery [P < 0.001, OR 4.00 (95% CI, 2.15 to 7.54)] and pre-existing cardiomyopathy [P < 0.001, OR 17.48 (95% CI, 6.18 to 51.51)] emerged as predictors of cardiac arrest.CONCLUSIONThese first available European data on perioperative cardiac arrest from a large unselected cohort indicate that the overall perioperative incidence of cardiac arrest at our institution was slightly lower than published in the literature, whereas rates of anaesthesia-related and anaesthesia-contributory cardiac arrest were comparable. Most cardiac arrests related to anaesthesia were due to respiratory events. American Society of Anesthesiologists physical status grade at least 3, emergency surgery and pre-existing cardiomyopathy appear to be relevant risk factors for cardiac arrest.

Prospective clinical study comparing intraligamentary anesthesia and inferior alveolar nerve block for extraction of posterior mandibular teeth.
Author(s): Kämmerer, P W; Adubae, A; Buttchereit, I; Thiem, D G E; Daubländer, M; Frerich, B
Source: Clinical oral investigations; Apr 2018; vol. 22 (no. 3); p. 1469-1475
Publication Date: Apr 2018
Publication Type(s): Journal Article
Abstract:OBJECTIVESThe aim of the study was to compare the efficacy of intraligamentary anesthesia (ILA) with conventional inferior alveolar nerve block (IANB) for extraction of mandibular posterior teeth.MATERIALS AND METHODSIn a prospective clinical trial, a total of 301 mandibular posterior teeth were extracted in 266 patients. Randomization was conducted into those who received ILA (patients n = 98; teeth n = 105) and those who received IANB (patient n = 140; teeth n = 140). Twenty-eight patients were subjected to bilateral mandibular dental extractions and received both ILA und IANB (teeth n = 56 (ILA n = 28; IANB n = 28)). The primary objective was to evaluate the differences in pain during injection, in pain during tooth extraction (numeric rating scale (NRS)), and in anesthetic quality (complete/sufficient vs. insufficient/no effect). Differences in latency time, amount of anesthetic solution, need for second injection, and duration of local numbness as well as in the incidence of dry socket were assessed.RESULTSILA had significant lower pain of injection ($p < 0.001$), shorter latency time ($p < 0.001$), and shorter duration of local numbness ($p < 0.001$) and required lesser amount of local anesthetic solution ($p < 0.001$) together with a similar anesthetic quality ($p = 0.082$) compared to IANB. Concerning pain during extraction ($p = 0.211$), frequency of second injection ($p = 0.197$), and incidence of dry socket ($p = 0.178$), no significant differences were detected.CONCLUSIONILA fulfills the requirements of a minimal invasive and patient-friendly local anesthetic technique. In accordance, it represents a safe and reliable alternative to IANB for extraction of mandibular posterior teeth.CLINICAL RELEVANCEILA can be recommended for routine dental extractions.

Are corticosteroid injections more beneficial than anaesthetic injections alone in the management of rotator cuff-related shoulder pain? A systematic review.
Author(s): Cook, Tim; Minns Lowe, Catherine; Maybury, Mark; Lewis, Jeremy S
Source: British journal of sports medicine; Apr 2018; vol. 52 (no. 8); p. 497-504
Publication Date: Apr 2018
Publication Type(s): Journal Article Review
Available at British journal of sports medicine - from BMJ Journals
Abstract:OBJECTIVETo compare the effectiveness of corticosteroid injections to local anaesthetic injections in the management of rotator cuff-related shoulder pain (RCRSP).DESIGNSystematic review with best evidence synthesis.DATA SOURCESThe Cochrane, PubMed, CINAHL Plus, PEDro and EMBASE electronic databases were searched (inception until 8 June 2017). Reference lists of included articles were also hand searched.ELIGIBILITY

CRITERIATwo reviewers independently evaluated eligibility. Randomised controlled trials (RCTs) were included if they compared subacromial injections of corticosteroid with anaesthetic injections. Two reviewers independently extracted data regarding short-term, midterm and long-term outcomes for pain, self-reported function, range of motion and patient-perceived improvement.RESULTSThirteen RCTs (n=1013) were included. Four trials (n=475) were judged as being at low risk of bias. Three studies of low risk of bias favoured the use of corticosteroid over anaesthetic-only injections in the short term (up to 8 weeks). There was strong evidence of no significant difference between injection types in midterm outcomes (12-26 weeks). There was limited evidence of no significant difference between injection types in long-term outcomes.CONCLUSIONCorticosteroid injections may have a short-term benefit (up to 8 weeks) over local anaesthetic injections alone in the management of RCRSP. Beyond 8 weeks, there was no evidence to suggest a benefit of corticosteroid over local anaesthetic injections.TRIAL REGISTRATION NUMBERPROSPERO CRD42016033161.

Evaluation of lung and chest wall mechanics during anaesthesia using the PEEP-step method.
Author(s): Persson, P; Stenqvist, O; Lundin, S
Source: British journal of anaesthesia; Apr 2018; vol. 120 (no. 4); p. 860-867
Publication Date: Apr 2018
Publication Type(s): Journal Article
PubMedID: 29576127
Abstract:BACKGROUNDPostoperative pulmonary complications are common. Between patients there are differences in lung and chest wall mechanics. Individualised mechanical ventilation based on measurement of transpulmonary pressures would be a step forward. A previously described method evaluates lung and chest wall mechanics from a change of ΔPEEP and calculation of change in end-expiratory lung volume (ΔEELV). The aim of the present study was to validate this PEEP-step method (PSM) during general anaesthesia by comparing it with the conventional method using oesophageal pressure (PES) measurements.METHODSIn 24 lung healthy subjects (BMI 18.5-32), three different sizes of PEEP steps were performed during general anaesthesia and ΔEELVs were calculated. Transpulmonary driving pressure (ΔPL) for a tidal volume equal to each ΔEELV was measured using PES measurements and compared to ΔPEEP with limits of agreement and intraclass correlation coefficients (ICC). ΔPL calculated with both methods was compared with a Bland-Altman plot.RESULTSMean differences between ΔPEEP and ΔPL were <0.15 cm H2O, 95% limits of agreements -2.1 to 2.0 cm H2O, ICC 0.6-0.83. Mean differences between ΔPL calculated by both methods were <0.2 cm H2O. Ratio of lung elastance and respiratory system elastance was 0.5-0.95.CONCLUSIONSThe large variation in mechanical properties among the lung healthy patients stresses the need for individualised ventilator settings based on measurements of lung and chest wall mechanics. The agreement between ΔPLs measured by the two methods during general anaesthesia suggests the use of the non-invasive PSM in this patient population.CLINICAL TRIAL REGISTRATIONNCT 02830516.

Single-shot pectoral plane (PECs I and PECs II) blocks versus continuous local anaesthetic infusion analgesia or both after non-ambulatory breast-cancer surgery: a prospective, randomised, double-blind trial.
Author(s): O'Scanaill, P; Keane, S; Wall, V; Flood, G; Buggy, D J
Source: British journal of anaesthesia; Apr 2018; vol. 120 (no. 4); p. 846-853
Publication Date: Apr 2018
Publication Type(s): Journal Article
PubMedID: 29576125
Abstract:BACKGROUNDPectoral plane blocks (PECs) are increasingly used in analgesia for patients undergoing breast surgery, and were recently found to be at least equivalent to single-shot paravertebral anaesthesia. However, there are no data comparing PECs with the popular practice of continuous local anaesthetic wound infusion (LA infusion) analgesia for breast surgery. Therefore, we compared the efficacy and safety of PECs blocks with LA infusion, or a combination of both in patients undergoing non-ambulatory breast-cancer surgery.METHODSThis single-centre, prospective, randomised, double-blind trial analysed 45 women to receive either PECs blocks [levobupivacaine 0.25%, 10 ml PECs I and levobupivacaine 0.25%, 20 ml PECs II (PECs group); LA infusion catheter (levobupivacaine 0.1% at 10 ml h-1 for 24 h (LA infusion group); or both (PECs and LA infusion)]. The primary outcome measure was area under the curve of the pain verbal rating score whilst moving vs time (AUC) over 24 h. Secondary outcomes included total opioid consumption at 24 h.RESULTSAUC moving was mean (SD) 71 (34) mm h-1vs 58 (41) vs 23 (20) in PECs, LA infusion, and both, respectively; P=0.002. AUC at rest was also significantly lower in patients receiving both. The total 24 h opioid consumption [median (25-75%)] was 14 mg (9-26) vs 11 (8-24) vs 9 (5-11); P=0.4. No adverse events were

observed.CONCLUSIONSThe combination of both pre-incisional PECs blocks and postoperative LA infusion provides better analgesia over 24 h than either technique alone after non-ambulatory breast-cancer surgery.CLINICAL TRIAL REGISTRATIONNCT 03024697.
Database: Medline

Should continuous rather than single-injection interscalene block be routinely offered for major shoulder surgery? A meta-analysis of the analgesic and side-effects profiles.
Author(s): Vorobeichik, L; Brull, R; Bowry, R; Laffey, J G; Abdallah, F W
Source: British journal of anaesthesia; Apr 2018; vol. 120 (no. 4); p. 679-692
Publication Date: Apr 2018
Publication Type(s): Journal Article Review
Abstract:BACKGROUNDMajor shoulder surgery is associated with moderate-to-severe pain, but consensus on the optimal analgesic approach is lacking. Continuous catheter-based interscalene block (CISB) prolongs the analgesic benefits of its single-injection counterpart (SISB), but concerns over CISB complications and difficulties in interpreting comparative evidence examining major and minor shoulder procedures simultaneously, despite their differences in postoperative pain, have limited CISB popularity. This meta-analysis evaluates the CISB analgesic role and complications compared with SISB for major shoulder surgery.METHODSWe retrieved randomised controlled trials (RCTs) comparing the effects of CISB to SISB on analgesic outcomes and side-effects after major shoulder surgery. Postoperative opioid consumption at 24 h was designated as the primary outcome. Secondary outcomes included 24-48 h opioid consumption, postoperative rest and dynamic pain scores up to 72 h, time-to-first analgesic, recovery room and hospital stay durations, patient satisfaction, postoperative nausea and vomiting, respiratory function, and block-related complications.RESULTSData from 15 RCTs were pooled using random-effects modelling. Compared with SISB, CISB reduced 24- and 48-h oral morphine consumption by a weighted mean difference [95% confidence interval] of 50.9 mg [-81.6, -20.2], (P=0.001) and 44.7 mg [-80.9, -8.7], (P<0.0001), respectively. Additionally, CISB provided superior rest and dynamic pain control beyond 48 h, prolonged time-to-first analgesic, enhanced satisfaction, and reduced postoperative nausea and vomiting without complications. CISB caused an 11.0-11.7% decrease in respiratory indices. Result heterogeneity was successfully explained.CONCLUSIONSHigh-level evidence indicates that CISB provides superior analgesia up to 48 h after major shoulder surgery, without increasing side-effects, compared with SISB. The importance of CISB-related changes in respiratory indices is questionable.

Effect of Epidural Infusion Bolus Delivery Rate on the Duration of Labor Analgesia: A Randomized Clinical Trial.
Author(s): Lange, Elizabeth M S; Wong, Cynthia A; Fitzgerald, Paul C; Davila, Wilmer F; Rao, Suman; McCarthy, Robert J; Toledo, Paloma
Source: Anesthesiology; Apr 2018; vol. 128 (no. 4); p. 745-753
Publication Date: Apr 2018
Publication Type(s): Journal Article
PubMedID: 29351097
Available at Anesthesiology - from Ovid (Journals @ Ovid) - Remote Access
Abstract:BACKGROUNDProgrammed intermittent boluses of local anesthetic have been shown to be superior to continuous infusions for maintenance of labor analgesia. High-rate epidural boluses increase delivery pressure at the catheter orifice and may improve drug distribution in the epidural space. We hypothesized that high-rate drug delivery would improve labor analgesia and reduce the requirement for provider-administered supplemental boluses for breakthrough pain.METHODSNulliparous women with a singleton pregnancy at a cervical dilation of less than or equal to 5 cm at request for neuraxial analgesia were eligible for this superiority-design, double-blind, randomized controlled trial. Neuraxial analgesia was initiated with intrathecal fentanyl 25 µg. The maintenance epidural solution was bupivacaine 0.625 mg/ml with fentanyl 1.95 µg/ml. Programmed (every 60 min) intermittent boluses (10 ml) and patient controlled bolus (5 ml bolus, lockout interval: 10 min) were administered at a rate of 100 ml/h (low-rate) or 300 ml/h (high-rate). The primary outcome was percentage of patients requiring provider-administered supplemental bolus analgesia.RESULTSOne hundred eight women were randomized to the low- and 102 to the high-rate group. Provider-administered supplemental bolus doses were requested by 44 of 108 (40.7%) in the low- and 37 of 102 (36.3%) in the high-rate group (difference -4.4%; 95% CI of the difference, -18.5 to 9.1%; P = 0.67). Patient requested/delivered epidural bolus ratio and the hourly bupivacaine consumption were not different between groups. No subject had an adverse event.CONCLUSIONSLabor analgesia quality, assessed by need for provider-

and patient-administered supplemental analgesia and hourly bupivacaine consumption was not improved by high-rate epidural bolus administration.

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; Carvalho, Lídia R; Chen, Chung-Yen O; Braz, José Reinaldo C; Braz, Mariana G
Source: Anesthesia and analgesia; Apr 2018; vol. 126 (no. 4); p. 1198-1205
Publication Date: Apr 2018
Publication Type(s): Journal Article
Available at Anesthesia and analgesia - from Ovid (Journals @ Ovid) - Remote Access
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.

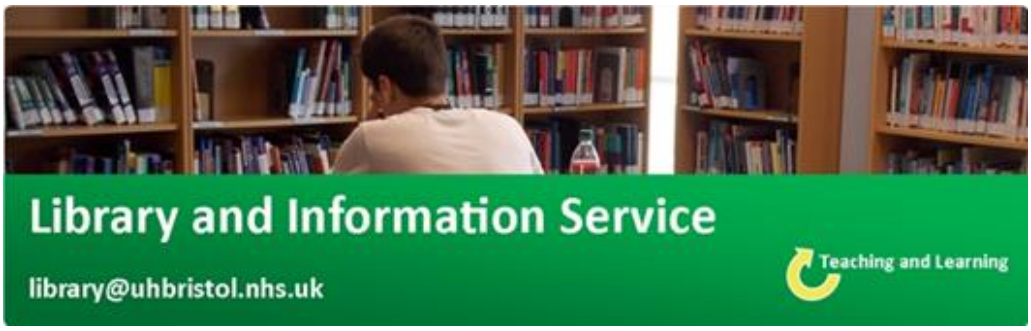
Incidence and Risk Factors of Coagulation Profile Derangement After Liver Surgery: Implications for the Use of Epidural Analgesia-A Retrospective Cohort Study.
Author(s): Jacquenod, Pierre; Wallon, Grégoire; Gazon, Mathieu; Darnis, Benjamin; Pradat, Pierre; Virlogeux, Victor; Farges, Olivier; Aubrun, Frédéric
Source: Anesthesia and analgesia; Apr 2018; vol. 126 (no. 4); p. 1142-1147
Publication Date: Apr 2018
Publication Type(s): Journal Article
Available at Anesthesia and analgesia - from Ovid (Journals @ Ovid) - Remote Access
Abstract:BACKGROUNDHepatic surgery is a major abdominal surgery. Epidural analgesia may decrease the incidence of postoperative morbidities. Hemostatic disorders frequently occur after hepatic resection. Insertion or withdrawal (whether accidental or not) of an epidural catheter during coagulopathic state may cause an epidural hematoma. The aim of the study is to determine the incidence of coagulopathy after hepatectomy, interfering with epidural catheter removal, and to identify the risk factors related to coagulopathy.METHODSWe performed a retrospective review of a prospective, multicenter, observational database including patients over 18 years old with a history of liver resection. Main collected data were the following: age, preexisting cirrhosis, Child-Pugh class, preoperative and postoperative coagulation profiles, extent of liver resection, blood loss, blood products transfused during surgery. International normalized ratio (INR) ≥1.5 and/or platelet count <80,000/mm defined coagulopathy according to the neuraxial anesthesia guidelines. A logistic regression analysis was performed to assess the association between selected factors and a coagulopathic state after hepatic resection.RESULTSOne thousand three hundred seventy-one patients were assessed. Seven hundred fifty-nine patients had data available about postoperative coagulopathy, which was

observed in 53.5% [95% confidence interval, 50.0-57.1]. Maximum derangement in INR occurred on the first postoperative day, and platelet count reached a trough peak on postoperative days 2 and 3. In the multivariable analysis, preexisting hepatic cirrhosis (odds ratio [OR] = 2.49 [1.38-4.51]; P = .003), preoperative INR ≥1.3 (OR = 2.39 [1.10-5.17]; P = .027), preoperative platelet count <150 G/L (OR = 3.03 [1.77-5.20]; P = .004), major hepatectomy (OR = 2.96 [2.07-4.23]; P < .001), and estimated intraoperative blood loss ≥1000 mL (OR = 1.85 [1.08-3.18]; P = .025) were associated with postoperative coagulopathy.CONCLUSIONSCoagulopathy is frequent (53.5% [95% confidence interval, 50.0-57.1]) after liver resection. Epidural analgesia seems safe in patients undergoing minor hepatic resection without preexisting hepatic cirrhosis, showing a normal preoperative INR and platelet count.

Enhancing inactivation rather than reducing activation of Nav1.7 channels by a clinically effective analgesic CNV1014802.
Author(s): Zheng, Yue-Ming; Wang, Wan-Fu; Li, Yan-Fen; Yu, Yong; Gao, Zhao-Bing
Source: Acta pharmacologica Sinica; Apr 2018; vol. 39 (no. 4); p. 587-596
Publication Date: Apr 2018
Publication Type(s): Journal Article
Available at Acta Pharmacologica Sinica - from Europe PubMed Central - Open Access
Abstract: The Nav1.7 channel represents a promising target for pain relief. In the recent decades, a number of Nav1.7 channel inhibitors have been developed. According to the effects on channel kinetics, these inhibitors could be divided into two major classes: reducing activation or enhancing inactivation. To date, however, only several inhibitors have moved forward into phase 2 clinical trials and most of them display a less than ideal analgesic efficacy, thus intensifying the controversy regarding if an ideal candidate should preferentially affect the activation or inactivation state. In the present study, we investigated the action mechanisms of a recently clinically confirmed inhibitor CNV1014802 using both electrophysiology and site-directed mutagenesis.

Effects of anesthesia with nitrous oxide on tympanoplasty outcomes: a randomized controlled trial.
Author(s): Kouhi, Ali; Hajimohammadi, Fatemeh; Dabiri, Sasan; Amali, Amin; Enayati, Neda; Manavi, Sahar; Saeedi, Niloufar; Bidar, Ziba
Source: Acta oto-laryngologica; Apr 2018; vol. 138 (no. 4); p. 363-366
Publication Date: Apr 2018
Publication Type(s): Journal Article
Abstract:OBJECTIVESTo investigate effects of nitrous oxide (N2O), as inhalational anesthetic agent, on tympanoplasty outcomes.METHODSIn this randomized controlled trial, patients were randomized into two groups: 39 patients who received N2O as an inhalant anesthesia and 47 patients who did not receive. All were operated on with standard type of ear surgery. The protocol for the two groups was identical. Before surgery baseline audiometry was performed. Postoperative audiological controls were carried out at 3 months.RESULTSThere was no statistically significant difference between two groups regarding graft outcomes. No significant differences were found between the two groups regarding air-bone gap or bone conduction hearing level.CONCLUSIONSNitrous oxide usage does not seem to have significant impact on graft or hearing outcome of patients undergoing surgical repair of tympanic membrane.

Submucosal Diclofenac for Acute Postoperative Pain in Third Molar Surgery: A Randomized, Controlled Clinical Trial.
Author(s): Gorecki, P.; Rainsford, K. D.; Taneja, P.; Bulsara, Y.; Pearson, D.; Saund, D.; Ahmed, B.; Dietrich, T.
Source: Journal of Dental Research; Apr 2018; vol. 97 (no. 4); p. 381-387
Publication Date: Apr 2018
Publication Type(s): Academic Journal
Abstract: Diclofenac sodium is a widely used nonsteroidal anti-inflammatory drug (NSAID) for relief of inflammatory pain. A recent formulation combines this drug with hydroxypropyl-β-cyclodextrin (HPβCD) to improve its solubility and to enable subcutaneous administration. Previous studies confirmed the efficacy of this combination. This study's aim was to evaluate the efficacy, safety, and local tolerability of diclofenac HPβCD administered as a local submucosal injection prior to lower third molar surgery. We conducted a prospective, randomized, double-blind, placebo-controlled, parallel-group phase II single-center study.



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