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Current Awareness Database Articles

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Title: Unilateral paravertebral block compared with subarachnoid anesthesia for the management of postoperative pain syndrome after inguinal herniorrhaphy: a randomized controlled clinical trial.

Citation: Pain, May 2016, vol. 157, no. 5, p. 1105-1113, 1872-6623 (May 2016)

Author(s): Fusco, Pierfrancesco, Cofini, Vincenza, Petrucci, Emiliano, Scimia, Paolo, Paladini, Giuseppe, Behr, Astrid U, Gobbi, Fabio, Pozzone, Tullio, Danelli, Giorgio, Di Marco, Mauro, Vicentini, Roberto, Necozone, Stefano, Marinangeli, Franco

Abstract: Inguinal herniorrhaphy is a common surgical procedure. The aim of this investigation was to determine whether unilateral paravertebral block could provide better control of postoperative pain syndrome compared with unilateral subarachnoid block (SAB). A randomized controlled study was conducted using 50 patients with unilateral inguinal hernias. The patients were randomized to receive either paravertebral block (S group) or SAB (C group). Paravertebral block was performed by injecting a total of 20 mL of 0.5% levobupivacaine from T9 to T12 under ultrasound guidance, whereas SAB was performed by injecting 13 mg of 0.5% levobupivacaine at the L3 to L4 level. Data regarding anesthesia, hemodynamic changes, side effects, time spent in the postanesthesia care unit, the Karnofsky Performance Status, acute pain and neuropathic disturbances were recorded. Paravertebral block provided good anesthesia of the inguinal region without patient or surgeon discomfort, with better hemodynamic stability and safety and with a reduced time to discharge from the postanesthesia care unit compared with SAB. During the postsurgical and posthospital discharge follow-ups, rest and incident pain and neuropathic positive phenomena were better controlled in the S group than in the C group. The consumption of painkillers was higher in the C group than in the

S group throughout the follow-up period. Paravertebral block can be considered a viable alternative to common anesthetic procedures performed for inguinal hernia repair surgery. Paravertebral block provided good management of acute postoperative pain and limited neuropathic postoperative disturbances.

Title: American Association of Oral and Maxillofacial Surgeons' Anesthesia and Third Molar Extraction Benchmark Study: Rationale, Methods, and Initial Findings.

Citation: Journal of oral and maxillofacial surgery : official journal of the American Association of Oral and Maxillofacial Surgeons, May 2016, vol. 74, no. 5, p. 903-910, 1531-5053 (May 2016)

Author(s): Dodson, Thomas B, Gonzalez, Martin L

Abstract: Benchmark statistics are used in quality assurance/quality improvement processes. The purposes of the present report are to 1) review the rationale for a new specialty-specific benchmark study, 2) summarize the methods to create a practice-based research collaborative (P-BRC) designed for collecting data to create benchmarks, and 3) describe the characteristics of the P-BRC surgeon participants. The study was designed as a prospective cohort study. We created a P-BRC composed of randomly selected American Association of Oral and Maxillofacial Surgeons (AAOMS) members in private practice in the United States, who agreed to enroll patients scheduled to receive anesthesia of any type in the office-based ambulatory setting. The study variables included clinician demographics and their P-BRC status, grouped as 1) invited, active participants, 2) invited, inactive participants, and 3) uninvited AAOMS members. The P-BRC participants collected data for dozens of variables from their patients related to anesthesia. If the procedure was third molar (M3) surgery, additional M3 procedure-specific data were collected. Data analyses were composed of computing descriptive and bivariate statistics. Preliminary sample size estimates suggested that the P-BRC should include 300 surgeons to produce estimates with a $\pm 5\%$ error. During the 1-year study interval, 642 surgeons (11.8%) were invited to join the P-BRC from a population of 5,455 eligible AAOMS members. The 124 active participants in the P-BRC contributed 6,344 subjects to the anesthesia data set and 2,978 subjects who had had 9,207 M3s removed to the M3 data set. The active participants in the P-BRC were younger and more likely to be board-certified than were the inactive participants ($P < .05$). Details of the anesthesia and M3 variables will follow in future reports. Despite vigorous efforts, we did not achieve our stated goal of creating a P-BRC composed of a random sample of 300 AAOMS members. With the current P-BRC sample, variables with very high ($>93\%$) or very low ($<7\%$) frequency estimates will produce estimates with the desired range of $\pm 5\%$ error. The P-BRC includes a sample of self-selected, not random, participants and is well-characterized in terms of age, gender, board-certification status, academic degrees, and geographic distribution. Copyright © 2016 American Association of Oral and Maxillofacial Surgeons. Published by Elsevier Inc. All rights reserved.

Title: Bacterial Contamination of the Anesthesia Workplace and Efficiency of Routine Cleaning Procedures: A Prospective Cohort Study.

Citation: Anesthesia and analgesia, May 2016, vol. 122, no. 5, p. 1444-1447, 1526-7598 (May 2016)

Author(s): Goebel, Ulrich, Gebele, Nicole, Ebner, Winfried, Dettenkofer, Markus, Bürkle, Hartmut, Hauschke, Dieter, Schulz-Stübner, Sebastian

Abstract: In this prospective cohort study, 200 decontamination (cleaning and disinfection) procedures of the anesthesia workplace either by anesthesia nurses or by specially trained housekeeping staff were monitored. Time used by housekeeping staff was shorter (1.2 ± 0.1 vs 2.6 ± 0.2 minutes on average, data are mean $\pm$ SEM; $P < 0.0001$) with less visible marker spots (14.4 ± 0.68 [55%] vs 17.3 ± 0.75 [66.7%] on average, data are mean $\pm$ SEM; $P = 0.0041$), and the bacterial load showed a decrease ($\cong 67\%$, $P < 0.0001$) compared with anesthesia nurses. Specially trained housekeeping staff outperformed anesthesia nurses in cleaning the anesthesia workplace. Specific training for anesthesia workplace cleaning is supported by these findings.

Full Text:

Available from Ovid in [Anesthesia and Analgesia](#)

Title: Changes in First Postoperative Night Bispectral Index After Daytime Sedation Induced by Dexmedetomidine or Midazolam Under Regional Anesthesia: A Randomized Controlled Trial.

Citation: Regional anesthesia and pain medicine, May 2016, vol. 41, no. 3, p. 380-386

Author(s): Tan, Wen-Fei, Miao, Er-Ya, Jin, Feng, Ma, Hong, Lu, Huang-Wei

Abstract: Supplementation of spinal anesthesia with various sedatives is a standard protocol to alleviate patient anxiety associated with the surgical procedure. We hypothesized that, compared with dexmedetomidine, midazolam might have a subtle influence on sleep quality after surgery following elective transurethral prostatic resection (TURP) in elderly male patients. A randomized, double-blind, controlled trial was conducted at the First Hospital of China Medical University from July 2014 to January 2015. One hundred eleven patients undergoing TURP were enrolled and received intravenous saline infusion (control group), dexmedetomidine (dexmedetomidine group), or midazolam (midazolam group) for sedation during the spinal anesthesia procedure. The intraoperative sedative state and postoperative sleep quality were evaluated using a Bispectral Index (BIS)-Vista monitor. The primary outcome was postoperative sleep quality, as measured by the BIS-Vista monitor on the first night after surgery. The intraoperative BIS area under the curve value was significantly lower in the dexmedetomidine group (54.1%) compared with those in the other 2 groups (control group, 94.1%; midazolam group, 77.2%). The postoperative BIS area under the curve value was highest in the dexmedetomidine group at 88.7%. The BIS sleep efficiency index showed a significant 33.1% increase in the midazolam group compared with the dexmedetomidine group. The duration of sleep in the midazolam group was 237.8 minutes longer than that in the dexmedetomidine group. We conclude that midazolam combined with spinal anesthesia might preserve the sleep quality of elderly male patients immediately after TURP.

Title: Does Obstructive Sleep Apnea Influence Perioperative Outcome? A Qualitative Systematic Review for the Society of Anesthesia and Sleep Medicine Task Force on Preoperative Preparation of Patients with Sleep-Disordered Breathing.

Citation: Anesthesia and analgesia, May 2016, vol. 122, no. 5, p. 1321-1334, 1526-7598 (May 2016)

Author(s): Oppenheimer, Mathias, Cozowicz, Crispiana, Bugada, Dario, Mokhlesi, Babak, Kaw, Roop, Auckley, Dennis, Chung, Frances, Memtsoudis, Stavros G

Abstract: Obstructive sleep apnea (OSA) is a commonly encountered problem in the perioperative setting even though many patients remain undiagnosed at the time of surgery. The objective of this systematic review was to evaluate whether the diagnosis of OSA has an impact on postoperative

outcomes. We performed a systematic review of studies published in PubMed-MEDLINE, MEDLINE In-Process, and other nonindexed citations, Embase, Cochrane Central Register of Controlled Trials, Cochrane Database of Systematic Reviews, and Health Technology Assessment up to November 2014. Studies of adult patients with a diagnosis of OSA or high risk thereof, published in the English language, undergoing surgery or procedures under anesthesia care, and reporting ≥ 1 postoperative outcome were included. Overall, the included studies reported on 413,304 OSA and 8,556,279 control patients. The majority reported worse outcomes for a number of events, including pulmonary and combined complications, among patients with OSA versus the reference group. The association between OSA and in-hospital mortality varied among studies; 9 studies showed no impact of OSA on mortality, 3 studies suggested a decrease in mortality, and 1 study reported increased mortality. In summary, the majority of studies suggest that the presence of OSA is associated with an increased risk of postoperative complications.

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Available from *Ovid* in [Anesthesia and Analgesia](#)

Title: Two syringe spinal anesthesia technique for cesarean section: A controlled randomized study of a simple way to achieve more satisfactory block and less hypotension.

Citation: Anesthesia, essays and researches, May 2016, vol. 10, no. 2, p. 312-318

Author(s): Keera, Amr Aly Ismail, Elnabtity, Ali Mohamed Ali

Abstract: Multiple trials have been tried to prevent hypotension during spinal anesthesia. However, the drug choice and mode of administration is still a matter of debate. To compare the outcome of spinal injection of hyperbaric bupivacaine and fentanyl separately to standard injection of mixed fentanyl with hyperbaric bupivacaine. A randomized, controlled clinical trial. One hundred twenty-four parturient scheduled for elective cesarean section were randomly allocated into two groups, each 62 parturient: Group M received spinal anesthesia using 10 mg bupivacaine 0.5% premixed with 25 μ g fentanyl in the same syringe and Group S received 25 μ g fentanyl in one syringe and 10 mg bupivacaine 0.5% without barbotage in a second syringe. Patients with intraoperative pain that was controllable without the need for a shift to general anesthesia was significantly lower in Group S (3.2%) than in Group M (16.1%). The frequency of hypotension was significantly lower in Group S compared to Group M ($P < 0.05$). Time till the onset of sensory block was nonsignificantly shorter with nonsignificantly higher mean level of maximal sensory block in Group S compared to Group M ($P > 0.05$). There was no significant difference in the time till occurrence of hypotension, duration of hypotension, mean dose of ephedrine used for the treatment of hypotension and frequency of patients developed itching between the groups ($P > 0.05$). Separate intrathecal injection of fentanyl and hyperbaric bupivacaine provided a significant improvement in the quality of sensory block and significant reduction of the frequency of hypotension compared to injection of mixed medications.

Title: Sex Differences in the Morphine-Sparing Effects of Intraoperative Dexmedetomidine in Patient-Controlled Analgesia Following General Anesthesia: A Consort-Pro prospective, Randomized, Controlled Clinical Trial.

Citation: Medicine, May 2016, vol. 95, no. 18, p. e3619., 1536-5964 (May 2016)

Author(s): Li, Yuan-Yuan, Ge, Dong-Jian, Li, Jin-Yu, Qi, Bin

Abstract: Previous studies have reported that intraoperative dexmedetomidine has morphine-sparing effects in patient-controlled analgesia (PCA). The present study was designed to investigate the possible sex differences in the morphine-sparing effects of intraoperative dexmedetomidine following general anesthesia. A total of 223 patients scheduled for surgeries under general anesthesia were divided into female and male groups. Each group was then subdivided into 2 subgroups that were maintained using propofol/remifentanyl/dexmedetomidine (PRD) or propofol/remifentanyl/saline (PRS). During the first 24 hours postsurgery, both female and male PRD patients had lower scores on a visual analog scale (VAS) (fPRS vs fPRD, $P < 0.05$ or $P < 0.01$; mPRS vs mPRD, $P < 0.05$, $P < 0.01$, or $P < 0.001$) and consumed less morphine than their controls from the PRS group (fPRS vs fPRD, $P = 0.0392$; mPRS vs mPRD, $P = 0.0041$). Interestingly, the female PRD patients had similar VAS scores (fPRD vs mPRD, $P > 0.05$) and consumed comparable morphine compared to the male PRD patients (fPRD vs mPRD, $P = 0.4238$). However, when normalized to body weight, they consumed much more morphine than male PRD patients (fPRD vs mPRD, $P < 0.001$), and this effect was not seen in the PRS patients. Intraoperative administration of dexmedetomidine appeared to have a stronger morphine-sparing effect in controlling postoperative acute pain in male patients than in female patients.

Title: Comparative study for better adjuvant with ropivacaine in epidural anesthesia.

Citation: Anesthesia, essays and researches, May 2016, vol. 10, no. 2, p. 218-222

Author(s): Soni, Pramila

Abstract: Better adjuvants for epidural analgesia are still evolving. Dexmedetomidine that is alpha-2 agonist can be used as an adjuvant in epidural analgesia and anesthesia. The aim of this study was to compare the effect of dexmedetomidine versus clonidine in combination with ropivacaine in epidural anesthesia on intraoperative and postoperative analgesia, to find out the better adjuvant for regional anesthesia. Randomized control trial. Sixty adult patients (18-60 years) with American Society of Anesthesiologists (ASA) 1/ASA 2 grade and undergoing lower abdominal and lower limbs surgeries were included and randomized into three groups of 20 patients each. Group 1 - received ropivacaine with normal saline. Group 2 - received ropivacaine with dexmedetomidine. Group 3 - received ropivacaine with clonidine. Mean and Standard deviation were calculated. All the data were analyzed using analysis of variance and Chi-square test. The value of $P < 0.05$ was considered significant. All the three groups were comparable with respect to age, sex, and ASA grade. There was statistically significant mean time to reach T10 sensory block level (15.8, 5.7, 9.6 min in Groups 1, 2, and 3, respectively). The maximum duration of analgesia was statistically higher in Group 2 patients (383.7 vs. 365.3 and 280.5 min in Group 3 and Group 1, respectively). The mean time to reach motor block was significantly shorter in Group 2. Side effects were comparable in all groups with statistically insignificant fall in mean arterial pressure and hypotension was noted with Group 2. We concluded that the patients receiving the addition of dexmedetomidine to ropivacaine in epidural anesthesia had a faster onset and longer duration of sensory and motor blockade. Dexmedetomidine in comparison to clonidine had acceptable sedation and hemodynamic stability and minimal dose requirement make very effective adjuvant in epidural anesthesia with comparable side effects.

Title: Is there any benefit in associating neuraxial anesthesia to general anesthesia for coronary artery bypass graft surgery?

Citation: Brazilian journal of anesthesiology (Elsevier), May 2016, vol. 66, no. 3, p. 304-309

Author(s): Barbosa, Fabiano Timbó, de Sousa Rodrigues, Célio Fernando, Castro, Aldemar Araújo, da Cunha, Rafael Martins, Barbosa, Tatiana Roa Bezerra Wanderley

Abstract: The use of neuraxial anesthesia in cardiac surgery is recent, but the hemodynamic effects of local anesthetics and anticoagulation can result in risk to patients. To review the benefits of neuraxial anesthesia in cardiac surgery for CABG through a systematic review of systematic reviews. The search was performed in Pubmed (January 1966 to December 2012), Embase (1974 to December 2012), The Cochrane Library (volume 10, 2012) and Lilacs (1982 to December 2012) databases, in search of articles of systematic reviews. The following variables: mortality, myocardial infarction, stroke, in-hospital length of stay, arrhythmias and epidural hematoma were analyzed. The use of neuraxial anesthesia in cardiac surgery remains controversial. The greatest benefit found by this review was the possibility of reducing postoperative arrhythmias, but this result was contradictory among the identified findings. The results of findings regarding mortality, myocardial infarction, stroke and in-hospital length of stay did not show greater efficacy of neuraxial anesthesia. Copyright © 2014 Sociedade Brasileira de Anestesiologia. Published by Elsevier Editora Ltda. All rights reserved.

Title: Peroral endoscopic myotomy-initial experience with anesthetic management of 24 procedures and systematic review.

Citation: Anesthesia, essays and researches, May 2016, vol. 10, no. 2, p. 297-300

Author(s): Goudra, Basavana, Singh, Preet Mohinder, Gouda, Gowri, Sinha, Ashish C

Abstract: Peroral endoscopic myotomy (POEM) is a novel method of treating achalasia of the esophagus. Very little data are available to guide the anesthesia providers caring for these patients. The anesthetic challenges are primarily related to the risk of pulmonary aspiration. There is also a potential risk of pneumomediastinum, pneumoperitoneum, subcutaneous, or submucosal emphysema, as a result of carbon dioxide tracking into the soft tissues surrounding the esophagus and lower esophageal sphincter. In this retrospective study, electronic charts of 24 patients who underwent POEM over 18 months were reviewed. Demographic data, fasting status, relevant aspiration risks, anesthetic technique, and postoperative care measures were extracted. Fasting times for both solids and liquids were variable. None of the patients underwent preprocedural esophageal emptying. Standard induction and intubation were performed in 16, rapid sequence induction (RSI) with cricoid pressure in seven, and modified rapid sequence without application of cricoid pressure in one of the patients. One of the patients aspirated at induction, and the procedure was aborted. However, the procedure was performed successfully after a few weeks, this time a RSI with cricoid pressure was chosen. As there are no guidelines for the perioperative management of patients presenting for POEM presently, certain recommendations can be made. Preprocedural esophageal emptying should be considered in patients considered as high-risk, although cultural factors might preclude such an approach. Induction and intubation in a semi-reclining position might be useful. Although debatable, use of RSI with cricoid pressure should be strongly considered.

Title: Randomised controlled trial of spinal anaesthesia with bupivacaine or 2-chloroprocaine during caesarean section.

Citation: Acta anaesthesiologica Scandinavica, May 2016, vol. 60, no. 5, p. 642-649

Author(s): Maes, S, Laubach, M, Poelaert, J

Abstract: Neuraxial anaesthesia is the desired method for Caesarean section. Bupivacaine is a well-known local anaesthetic. It has a long duration of action and can cause unpredictable levels of anaesthesia with subsequent prolonged discharge time. 2-Chloroprocaine has a rapid onset of action, producing an excellent sensory and motor block and has a rapid hydrolysis in the bloodstream by pseudocholinesterase. We compared bupivacaine and 2-chloroprocaine for spinal anaesthesia during Caesarean section. The primary endpoint was the earliest reversal sign of the motor block. Sixty ASA I/II patients, planned for elective singleton Caesarean section, were equally randomised to three groups. All patients received a combined spinal-epidural anaesthesia. The first group received 2-chloroprocaine (40 mg) without sufentanil, the second group received 2-chloroprocaine (40 mg) with sufentanil (1 µg) and the third group received hyperbaric bupivacaine (7.5 mg) with sufentanil (1 µg) as a spinal anaesthetic. Motor and sensory blockade were assessed at specific time points. There was no difference between the three groups regarding the time to regression of the motor block. However, at 5 min post spinal injection, the level of sensory block was higher for both groups with 2-chloroprocaine, in comparison with the bupivacaine group. 2-Chloroprocaine can be used for low risk Caesarean section in healthy parturients. There is no difference in time to motor block resolution compared to bupivacaine. Motor recovery seems more predictable for 2-chloroprocaine and may be beneficial for the breastfeeding initiation. © 2015 The Acta Anaesthesiologica Scandinavica Foundation. Published by John Wiley & Sons Ltd.

Title: Low-Dose or High-Dose Rocuronium Reversed with Neostigmine or Sugammadex for Cesarean Delivery Anesthesia: A Randomized Controlled Noninferiority Trial of Time to Tracheal Intubation and Extubation.

Citation: Anesthesia and analgesia, May 2016, vol. 122, no. 5, p. 1536-1545, 1526-7598 (May 2016)

Author(s): Stourac, Petr, Adamus, Milan, Seidlova, Dagmar, Pavlik, Tomas, Janku, Petr, Krikava, Ivo, Mrozek, Zdenek, Prochazka, Martin, Klucka, Jozef, Stoudek, Roman, Bartikova, Ivana, Kosinova, Martina, Harazim, Hana, Robotkova, Hana, Hejduk, Karel, Hodicka, Zuzana, Kirchnerova, Martina, Francakova, Jana, Obare Pyszkova, Lenka, Hlozkova, Jarmila, Sevcik, Pavel

Abstract: Rocuronium for cesarean delivery under general anesthesia is an alternative to succinylcholine for rapid-sequence induction of anesthesia because of the availability of sugammadex for reversal of neuromuscular blockade. However, there are no large well-controlled studies in women undergoing general anesthesia for cesarean delivery. The aim of this noninferiority trial was to determine whether rocuronium and sugammadex confer benefit in time to tracheal intubation (primary outcome) and other neuromuscular blockade outcomes compared with succinylcholine, rocuronium, and neostigmine in women undergoing general anesthesia for cesarean delivery. We aimed to enroll all women undergoing general anesthesia for cesarean delivery in the 2 participating university hospitals (Brno, Olomouc, Czech Republic) in this single-blinded, randomized, controlled study. Women were randomly assigned to the ROC group (muscle relaxation induced with rocuronium 1 mg/kg and reversed with sugammadex 2-4 mg/kg) or the SUX group (succinylcholine 1 mg/kg for induction, rocuronium 0.3 mg/kg for maintenance, and neostigmine 0.03 mg/kg for reversal of the neuromuscular blockade). The interval from the end of propofol administration to tracheal intubation was the primary end point with a noninferiority margin of 20 seconds. We recorded intubating conditions (modified Vby-Mogensen score), neonatal outcome (Apgar score <7; umbilical artery pH), anesthesia complications, and subjective patient complaints 24 hours after surgery. We enrolled 240 parturients. The mean time to tracheal intubation was 2.9 seconds longer in the ROC group (95% confidence interval, -5.3 to 11.2 seconds), noninferior compared with the

SUX group. Absence of laryngoscopy resistance was greater in the ROC than in the SUX groups (ROC, 87.5%; SUX, 74.2%; $P = 0.019$), but there were no differences in vocal cord position ($P = 0.45$) or intubation response ($P = 0.31$) between groups. No statistically significant differences in incidence of anesthesia complications or in neonatal outcome were found (10-minute Apgar score <7 , $P = 0.07$; umbilical artery pH, $P = 0.43$). The incidence of postpartum myalgia was greater in the SUX group (ROC 0%; SUX 6.7%; $P = 0.007$). The incidence of subjective complaints was lower in the ROC group (ROC, 21.4%; SUX, 37.5%; $P = 0.007$). We conclude that rocuronium for rapid-sequence induction is noninferior for time to tracheal intubation and is accompanied by more frequent absence of laryngoscopy resistance and lower incidence of myalgia in comparison with succinylcholine for cesarean delivery under general anesthesia.

Full Text:

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Title: Efficacy of Postoperative Pain Management Using Continuous Local Anesthetic Infusion at the Iliac Crest Bone Graft Site in Patients with Adolescent Idiopathic Scoliosis: A Parallel, Double-Blinded, Randomized Controlled Pilot Trial.

Citation: Global spine journal, May 2016, vol. 6, no. 3, p. 220-228, 2192-5682 (May 2016)

Author(s): Samartzis, Dino, Bow, Cora, Cheung, Jason Pui Yin, Sham, Phoebe, Mak, Kin-Cheung, Cheung, Wai-Yuen, Wong, Yat-Wa, Luk, Keith D K, Cheung, Kenneth M C, Lawmin, Jean-Claude

Abstract: Study Design Randomized controlled trial. Objective Adolescent idiopathic scoliosis (AIS) is a common spinal deformity that affects every population. In severe deformity, surgical intervention is performed. Autogenous iliac crest bone graft (ICBG) harvesting remains a common procedure worldwide for scoliosis surgery. Postoperative pain at the ICBG donor site is a major concern in patients undergoing spine surgery that affects postoperative functional outcome and consumes health care resources. Previous studies have noted a decrease in pain and postoperative analgesic use with the application of continuous infusion of anesthetic at the ICBG site in comparison with placebo. However, there is lack of evidence addressing the efficacy of continuous anesthetic infusion at the ICBG site in young patients and in particular those with spinal deformity, such as AIS. As such, this parallel, double-blinded, randomized controlled trial addressed the pain management efficacy of continuous anesthetic infusion versus saline at the ICBG site in patients with AIS during the immediate postoperative period. Methods Participants were randomized into two groups. Group A (control subjects) received 3 mL per hour of saline locally at the ICBG site, and group B (treatment subjects) received a constant rate of infusion of 3 mL per hour of 0.25% levobupivacaine. Both groups received their postoperative intervention for 47 hours. All subjects and outcome assessors were blinded to the type of intervention. Utilizing the visual analog pain scale, pain was assessed at the primary spine surgical site, ICBG site, and contralateral ICBG site. Overall physical pain was assessed by the McGill Pain Questionnaire. The degree of analgesic use and complications were also evaluated. All outcomes were assessed up until the fourth day of the patients' hospitalization following surgery. Results Twelve subjects were recruited (five in group A; seven in group B). No difference was noted at baseline regarding age, weight, height, arm span, sex, curve type, instrumented and fused levels, length of hospitalization, and pain scores between groups. Postoperatively, no difference was noted in surgical site pain between groups ($p > 0.05$). However, decreased ICBG and contralateral ICBG pain decreased twofold in group B patients in comparison with group A. Similarly, group B subjects had notably decreased postoperative overall pain scores (group A, mean 15.3; group B, mean 3.8). No significant differences were noted for the pain scores due to the small sample size. Conclusions This study is the first with a robust level I study design to assess the efficacy of continuous infusion of analgesia into the ICBG site in young patients with AIS.

This pilot study noted a trend that continuous anesthetic infusion reduces pain at the ICBG site and may further decrease overall physical bodily pain. This study further established a sample size calculation to facilitate large-scale studies addressing these parameters. This study provides further support of postoperative pain management options for children with spinal deformities.

Title: Warming before and after epidural block before general anaesthesia for major abdominal surgery prevents perioperative hypothermia: A randomised controlled trial.

Citation: European journal of anaesthesiology, May 2016, vol. 33, no. 5, p. 334-340

Author(s): Horn, Ernst-Peter, Bein, Berthold, Broch, Ole, Iden, Timo, Böhm, Ruwen, Latz, Svea-Kristina, Höcker, Jan

Abstract: Epidural analgesia (EDA) is known to be an independent risk factor for perioperative hypothermia and its many known adverse effects. Combined general and epidural anaesthesia decreases intraoperative core temperature more rapidly than general anaesthesia alone. Hence, adequate warming procedures are needed for these patients. We evaluated the effects of active skin-surface warming before and/or after initiation of EDA during general anaesthesia as a procedure to prevent perioperative hypothermia. A randomised controlled trial. Department of Anaesthesiology in a general hospital in Germany from January 2013 until August 2014. After obtaining written informed consent, we included 99 adult patients undergoing elective major abdominal surgery under combined general anaesthesia and EDA with an expected duration of surgery of at least 120 min. Patients were excluded if they were under 18 years of age, classified as American Society of Anesthesiologists' physical status 4 or higher or if patients refused EDA. Patients were randomly assigned to one of three groups and received either only passive insulation, 15 min of active air-forced warming after EDA and before induction of general anaesthesia, or two periods, each of 15 min, of active air-forced warming before and after EDA. Core and skin temperatures were measured at several time points throughout the study. The primary outcome measure was the incidence of hypothermia on arrival in the ICU. The secondary outcome measure was the incidence of postoperative shivering. In addition, the perioperative change in body core temperature was recorded. Without prewarming (n = 32), 72% of patients became hypothermic (<36°C) at the end of anaesthesia. Fifteen minutes of warming after insertion of the epidural catheter and before initiation of general anaesthesia reduced the incidence of postoperative hypothermia to 6% (n = 33). After two periods of 15 min of warming before and after insertion of the epidural catheter, no patient became hypothermic (n = 34). Prewarming in either 'warming' group prevents the initial temperature drop which was observed in the control group. Warming for 15 min before and after initiation of EDA in patients receiving combined anaesthesia is effective in preventing postoperative hypothermia. This trial was registered with ClinicalTrials.gov (identifier: NCT01795482).

Title: Ultrasound assessment of the gastric contents for the guidance of the anaesthetic strategy in infants with hypertrophic pyloric stenosis: a prospective cohort study.

Citation: British journal of anaesthesia, May 2016, vol. 116, no. 5, p. 649-654, 1471-6771 (May 2016)

Author(s): Gagey, A-C, de Queiroz Siqueira, M, Desgranges, F-P, Combet, S, Naulin, C, Chassard, D, Bouvet, L

Abstract: Evacuation of gastric content through a nasogastric tube, followed by rapid sequence induction, is usually recommended in infants undergoing pyloromyotomy. However, rapid sequence

induction may be challenging, and is therefore controversial. Some anaesthetists regularly perform classical non-rapid induction technique, after blind aspiration of the gastric contents, although this aspiration may have been incomplete. This prospective observational study aimed to assess whether the ultrasound monitoring of the aspiration of the stomach contents, may be useful to appropriately guide the choice of the anaesthetic induction technique, in infants undergoing pyloromyotomy. Infants undergoing pyloromyotomy were consecutively included. Ultrasound assessment of the antrum was performed before and after the aspiration of the gastric contents through a 10 French gastric tube. The stomach was defined as empty when no content was seen in both supine and right lateral positions. The correlation between antral area and the aspirated gastric volume was also tested. We analysed 34 infants. Ultrasound examination of the antrum failed in three infants. The stomach was empty in 30/34 infants (nine before aspiration, 21 after aspiration), allowing to perform a non-rapid induction technique in 88.2% of the infants. There was a significant correlation between antral area measured in right lateral decubitus and the aspirated gastric volume. Our results suggest that the qualitative ultrasound assessment of the antral content may be a simple and useful point-of-care tool, for the choice of the most appropriate anaesthetic technique for pyloromyotomy according to the estimated risk of pulmonary aspiration of gastric contents. © Crown copyright 2016.

Title: Preoperative airway assessment - experience gained from a multicentre cluster randomised trial and the Danish Anaesthesia Database.

Citation: Danish medical journal, May 2016, vol. 63, no. 5, 2245-1919 (May 2016)

Author(s): Nørskov, Anders Kehlet

Abstract: Difficulties with airway management in relation to general anaesthesia have been a challenge for the anaesthesiologist since the birth of anaesthesia. Massive landmark improvements have been made and general anaesthesia is now regarded as a safe procedure. However, rare, difficult airway management still occurs and it prompts increased risk of morbidity and mortality - especially when not anticipated. Several preoperative risk factors for airway difficulties have been identified, yet none have convincing diagnostic accuracy as stand alone tests. Combining several risk factors increase the predictive value of the test and multivariable risk models have been developed. The Simplified Airway Risk Index (SARI) is a predictive model developed for anticipation of a difficult direct laryngoscopy. However, neither the diagnostic accuracy of the SARI nor of any other model has been tested prospectively and compared with existing practice for airway assessment in a randomised trial setting. The first objective of this thesis was to quantify the proportion of unanticipated difficult intubation and difficult mask ventilation in Denmark. The second objective was to design a cluster randomised trial, using state of the art methodology, in order to test the clinical impact of using the SARI for preoperative airway assessment compared with a clinical judgement based on usual practice for airway assessment. Finally, to test if implementation of the SARI would reduce the proportion of unanticipated difficult intubation compared with usual care for airway assessment. This thesis is based on data from the Danish Anaesthesia Database (DAD). Paper 1 presents an observational cohort study on 188,064 patients who underwent tracheal intubation from 2008 to 2011. Data on the anaesthesiologists' preoperative anticipations of airway difficulties was compared with actual airway management conditions, thus enabling an estimation of the proportion of unanticipated difficulties with intubation and mask ventilation. Papers 2 and 3 outline the methodology and the pre-trial calculations and considerations leading to the DIFFICAIR trial described in Paper 4. The trial was designed to randomise anaesthesia department to either thorough education in, and subsequent use of the SARI for preoperative airway assessment or to continue usual care. Registration of the SARI in DAD was made mandatory in SARI departments and

impossible in usual care departments. Conditions regarding anticipation of difficulties and actual airway managements were recorded as for Paper 1. DAD data made it possible to estimate an appropriate sample size, considering the between cluster variation, and to construct a stratification variable based on 2011 baseline values of the primary outcome used in the DIFFICAIR trial. Paper 1 revealed that 1.86% of all patients who were intubated, but not planned for advanced intubation techniques (e.g. video laryngoscopy), were unanticipated difficult to intubate. However, 75 to 93% of all difficult intubations were unanticipated. Furthermore, 94% of all difficult mask ventilations were unanticipated. In Paper 4, 59,514 patients were included in the primary analyses. The proportion of unanticipated difficult intubations was 2.38% (696/29,209) in SARI departments and 2.39% (723/30,305) in usual care departments. The adjusted odds ratio was 1.03 (95% CI: 0.77-1.38), $p = 0.84$. No significant differences were detected in other adjusted outcome measures and neither a 58% increase in patients anticipated to have intubation difficulties nor an 84% increase in patients scheduled for advanced intubation techniques in SARI departments reached statistical significance, $p = 0.29$ and $p = 0.06$ respectively. The papers constituting this thesis demonstrate that at high proportion of airway management difficulties are unanticipated. In a cluster randomised trial it was not possible to reduce the proportion of unanticipated difficult intubation in daily clinical practice by implementing a systematic approach for airway assessment compared with usual care. However, implementation of the SARI may increase the anticipation of intubation difficulties and it may change practice towards advanced intubation techniques. This thesis underlines the continued challenge anaesthesiologists face in predicting airway management related difficulties.

Title: Subtenon block combined with general anesthesia for vitreoretinal surgery improves postoperative analgesia in adult: a randomized controlled trial.

Citation: Journal of clinical anesthesia, May 2016, vol. 30, p. 78-86, 1873-4529 (May 2016)

Author(s): Abouammoh, Marwan A, Abdelhalim, Ashraf A, Mohamed, Elsyed A, Elzoughari, Ismail, Mustafa, Mohamed, Al-Zahrani, Tariq A

Abstract: To evaluate the effects of subtenon block (SB) as an adjunct to general anesthesia on intraoperative oculocardiac reflex (OCR), postoperative pain, and postoperative nausea and vomiting (PONV) for vitreoretinal surgery. Prospective, randomized, double-blinded clinical trial. Operating room, postanesthesia care unit, and ward at a university-affiliated hospital. Eighty patients aged 40 to 65 years of American Society of Anesthesiologists I to II requesting general anesthesia for vitreoretinal surgery. Intervention and Measurements Patients were randomly assigned to 1 of 2 groups receiving either SB with mixture of 4 mL of 2% lidocaine and 0.5% bupivacaine (50:50) in group SB or subtenon injection of saline in group C after induction of anesthesia and before surgery in a double-blind manner. The time to first postoperative analgesic dose, incidence of intraoperative OCR, postoperative pain scores, perioperative analgesic requirements, number of patients requiring rescue analgesics during the 24-hour study period, incidence of PONV, and possible complications were recorded. Time to first postoperative analgesia was significantly longer in group SB ($P = .002$). Pain scores at the first 6 hours postoperatively were significantly lower in group SB ($P = .002$). Intraoperative and postoperative analgesic requirements were significantly reduced in group SB ($P = .015$). The incidence of OCR and PONV also significantly decreased in this group ($P = .001$ and $P = .011$, respectively). Use of SB combined with general anesthesia in patients undergoing vitreoretinal surgery reduces postoperative analgesic requirements and complications such as intraoperative OCR and PONV. Copyright © 2016 Elsevier Inc. All rights reserved.

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June (12pm)

Weds 8th	Understanding articles
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Tue 5th	Critical Appraisal
Wed 13 th	Statistics
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Quick exercise

Relative Risk

The relative risk is the ratio of probability of an event (a specified outcome) occurring in one group (i.e. those exposed to a particular intervention) compared to those in another group (i.e. those not exposed – a control group).

The relative risk can be interpreted using the following chart. First, you must determine whether the event (the outcome measure) is adverse or beneficial.

Relative Risk	Adverse outcome (e.g. death)	Beneficial outcome (e.g. recovery of limb function)
<1	Intervention better than control	Intervention worse than control
1	Intervention no better or worse than control	Intervention no better or worse than control
>1	Intervention worse than control	Intervention better than control

Have a go at interpreting the relative risks for these three studies using the chart above. Is the intervention better or worse than the control?

	Intervention	Population	Outcome measure (think: adverse or beneficial?)	Relative Risk
Study 1	Drug X	Adults at risk of a heart attack	Heart attack	1.2
Study 2	Therapy programme Y	Smokers	Smoking cessation	0.8
Study 3	Probiotic Z	Children on antibiotics	Diarrhoea	0.3

Find out more about relative risk in one of our **Basic Statistics** training sessions.
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Answers: Study 1: worse; Study 2: worse; Study 3: better



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