



Spud's Snippets

1. Early versus late initiation of epidural analgesia in labor: Does it increase the risk of cesarean section? A randomized trial

Gonen Ohel, Roni Gonen, Sonia Vaida, Shlomi Barak, Luis Gaitini.

American Journal of Obstetrics and Gynecology (2006) 194, 600–5.

Objective: To determine whether early initiation of epidural analgesia in nulliparous women affects the rate of cesarean sections and other obstetric outcome measures.

Study design: A randomized trial in which 449 at term nulliparous women in early labor, at less than 3 cm of cervical dilatation, were assigned to either immediate initiation of epidural analgesia at first request (221 women), or delay of epidural until the cervix dilated to at least 4 cm (228 women).

Results: At initiation of the epidural the mean cervical dilatation was 2.4 cm in the early epidural group and 4.6 cm in the late group ($P = 0.0001$). The rates of cesarean section were not significantly different between the groups (13% and 11%) in the early and late groups, respectively ($P = 0.77$).

The mean duration from randomization to full dilatation was significantly shorter in the early compared to the late epidural group - 5.9 hours and 6.6 hours respectively ($P = 0.04$). When questioned after delivery regarding their next labor, the women indicated a preference for early epidural.

Conclusion: Initiation of epidural analgesia in early labor, following the first request for epidural, did not result in increased cesarean deliveries, instrumental vaginal deliveries, and other adverse effects; furthermore, it was associated with shorter duration of the first stage of labor and was clearly preferred by the women.

Reviewer's comments: This study serves to confirm the experience of obstetric anaesthesiologists in private practice: that it is unnecessary to wait for established labour to place a labour epidural.

The experience in Durban is that placement of an epidural at the time of induction (normally 0700) allows parturients access to epidural analgesia that may not be possible later in the morning (with the onset of active labour) as the anaesthesiologists may all be busy in theatre. The only concern is that in the absence of labour pain and with the use of dilute solutions of local anaesthetic, accurate placement of the catheter may not be able to be confirmed by the presence of a surgical block. In rare cases this may necessitate another visit to the labour ward to perform a top-up or resite the catheter.

2. It is the right of every anaesthetist to refuse to participate in a maternal-request caesarean section.

International Journal of Obstetric Anesthesia (2006) 15, 33–37.

Proposer: C. W. J. Gass

Conclusion: Morally, the necessary added ethical force comes from the fundamental mandates of medicine: doing good and avoiding harm. While the specifics of beneficence and non-maleficence certainly vary by culture and clinical context, these two principles give physicians the right, and indeed the obligation, to withhold treatment that they consider harmful to patients.

Although ethical debates about autonomy and health care allocation are far from settled, the cost to the NHS of a caesarean section is significantly greater than that of a vaginal delivery. There are therefore strong utilitarian arguments against elective caesarean section without medical indication. The money, derived as it is from taxes, may be better used, for example, to provide additional midwifery staff. Cost may be one reason why the National Institute for Clinical Excellence advised against caesarean section on demand. Lastly, anaesthetists often seem to forget that they have professional responsibilities.

As a prominent obstetrician notes, "if we give up our professional training and act as a technician performing surgery at the behest of the woman, without questioning her reasons, we will lose our right to be considered a profession." This may represent one of the strongest arguments against the provision of caesarean section on demand. Opposer: William Camann

Conclusion: The choice of caesarean delivery in a non-obese, informed woman, at term with certain dates, and with no other relevant complications of pregnancy or other maternal confounding issues, under regional anesthesia, with intact membranes, and no evidence

of infection – is a reasonable choice. Maternal mortality is so low in this circumstance that possible loss of life is a non-issue. Unlike the Jehovah's Witness patient or situations such as termination of pregnancy, elective cesarean does not involve a religious or moral component.

The concept of elective cesarean delivery is becoming more popular, both in the medical community and among patients. This mode of delivery has now become an accepted, standard, recognized option. Certainly not all women will or should choose this option. The concept of "cesareans for all" is one that I do not support, although others have made this argument. Elective cesarean is not a circumstance in which conscientious objection to participate in medical care is relevant. Thus, the anesthetist does not have the right to refuse to participate, on moral or ethical grounds, in the care of a patient choosing to undergo elective cesarean delivery.

Reviewer's comment: The most recent figures available from the BHF showed labour and delivery to be the 7th most commonly compensated procedure among South African Medical Aid beneficiaries. The rate was 7 / 1 000 beneficiaries/ year with a caesarean section rate of 5.6 (80%). The threshold for caesarean section is understandably low to avoid fetal and maternal. The following reference from South America indicates that caesarean section may not be as benign a procedure as it is perceived by both medical practitioners and the lay public.

3. Caesarean delivery rates and pregnancy outcomes: the 2005 WHO global survey on maternal and perinatal health in Latin America.

José Villar, Eliette Valladares, Daniel Wojdyla, Nelly Zavaleta, et al, for the WHO 2005 global survey on maternal and perinatal health research group

Lancet 2006; 367: 1819–29

Summary

Background: Caesarean delivery rates continue to increase worldwide. Our aim was to assess the association between caesarean delivery and pregnancy outcome at the institutional level, adjusting for the pregnant population and institutional characteristics.

Methods: For the 2005 WHO global survey on maternal and perinatal health, we assessed a multistage stratified sample, comprising 24 geographic regions in eight countries in Latin America. We obtained individual data for all women admitted for delivery over 3 months to 120 institutions randomly selected from of 410 identified institutions. We also obtained institutional-level data.

Findings: We obtained data for 97 095 of 106 546 deliveries (91% coverage). The median rate of caesarean delivery was 33% (quartile range 24–43), with the highest rates of caesarean delivery noted in private hospitals (51%, 43–57).

Institution-specific rates of caesarean delivery were affected by primiparity, previous caesarean delivery, and institutional complexity. Rate of caesarean delivery was positively associated with postpartum antibiotic treatment and severe maternal morbidity and mortality, even after adjustment for risk factors. Increase in the rate of caesarean delivery was associated with an increase in fetal mortality rates and higher numbers of babies admitted to intensive care for 7 days or longer even after adjustment for preterm delivery. Rates of preterm delivery and neonatal mortality both rose at rates of caesarean delivery of between 10% and 20%. Interpretation High rates of caesarean delivery do not necessarily indicate better perinatal care and can be associated with harm.

Reviewer's comment: The Sun newspaper in Great Britain coined the phrase "Too Posh to push" when Victoria Beckham chose an elective caesarean section as the mode of delivery for her first child. Following the publication of this study the headline may need to be changed to "Not to posh to die".

While this is a retrospective review, assessment of nearly 100 000 deliveries cannot be discarded lightly. The incidence of caesarean delivery in South American private hospitals parallels the South African situation, exceeding 50%. This was not associated with reduced but surprisingly increased rates of both maternal and fetal morbidity and mortality.

Caesarean section is the commonest surgical procedure performed on an otherwise healthy patient, with significant consequences for the fetus, another patient. This study should prompt us to re-examine the indications we are using to perform caesarean sections, bearing in mind the fundamental principle of medicine: "First do no harm".

4. Synergism between paracetamol and non-steroidal anti-inflammatory drugs in experimental acute pain.

Hugo F. Miranda, Margarita M. Puig, Juan Carlos Prieto, Gianni Pinardi

Pain 121 (2006) 22–28

Abstract

The antinociception induced by the intraperitoneal coadministration of combinations of paracetamol with the non-steroidal anti-inflammatory drugs (NSAIDs) diclofenac, ibuprofen, ketoprofen, meloxicam, metamizol, naproxen, nimesulide, parecoxib and piroxicam was studied by isobolographic analysis in the acetic acid abdominal constriction test of mice (writhing test). The effective dose that produced 50% antinociception (ED50) was calculated from the log dose–response curves of fixed ratio combinations of paracetamol with each NSAID. By isobolographic analysis, this ED50 was compared to the theoretical additive ED50 calculated from the ED50 of paracetamol and of each NSAID alone obtained from ED50 dose–response curves.

As shown by isobolographic analysis, all the combinations were synergistic, the experimental ED50s being significantly smaller than the theoretically calculated ED50s. The results of this study demonstrate potent interactions between paracetamol and NSAIDs and validate the clinical use of combinations of these drugs in the treatment of pain conditions.

Reviewer's comments: South African anaesthesiologists are fortunate in having access to paracetamol in liquid, tablet / capsule, suppository and intravenous formulations allowing both enteral and parenteral administration. There is thus no reason to withhold paracetamol from post-surgical patients and the drug forms the basis of the multimodal approach to analgesia.

NSAIDs have significant potential to cause renal dysfunction in poorly hydrated patients in the postoperative period. Non-selective NSAIDs may cause bleeding due to platelet inhibition. Conversely the coxibs, that do not inhibit platelets or cause bleeding, may place susceptible patients at risk for coronary thrombosis. However the adverse effects of the NSAIDs are not immediately fatal, like the respiratory depression caused by opioids. Postoperative patients should thus receive a combination of paracetamol and a carefully selected NSAID (unless absolutely contraindicated) in addition to regional blocks and/or opioids.

5a. Non-steroidal anti-inflammatory drugs and the risk of acute myocardial infarction

Sonia Hernandez-Diaz, Cristina Varas-Lorenzo and Luis A. Garcia Rodriguez

Basic & Clinical Pharmacology & Toxicology 2006, 98, 266–274.

Abstract: Whether non-aspirin non-steroidal antiinflammatory drugs (NSAIDs) affect the risk of myocardial infarction is unclear. Also, it is unknown whether the effect varies by individual NSAIDs.

To summarize the evidence from published observational studies on the risk of myocardial infarction associated with both traditional NSAIDs (tNSAIDs) and selective inhibitors of cyclooxygenase-2 (Coxibs), the authors conducted a systematic review of cohort and case-control studies on NSAIDs and myocardial infarction published between 2000 and 2005.

Sixteen original studies were selected according to predefined criteria. Two researchers independently extracted the data on individual study characteristics and results. The authors calculated pooled relative risk (RR) estimates of myocardial infarction for specific NSAIDs compared with no NSAID use, tested the heterogeneity of effects, and evaluated potential reasons for heterogeneity. The pooled RR of myocardial infarction was 0.98 (95% confidence interval (CI): 0.92–1.05) for naproxen, 1.07 (95% CI: 1.02–1.12) for ibuprofen, 1.44 (95% CI: 1.32–1.56) for diclofenac, 0.96 (95% CI: 0.90–1.02) for celecoxib, and 1.26 (95% CI: 1.17–1.36) for rofecoxib (all doses).

The pooled RR for rofecoxib at doses ≤ 25 mg/day was 1.78 (95% CI: 1.36–2.34), and 1.18 (95% CI: 1.07–1.31) for doses >25 mg/day. The RR associated with naproxen was 0.83 (95% CI: 0.72–0.90) among non-users of low-dose aspirin. The RR associated with rofecoxib (all doses) was 1.39 (95% CI: 1.25–1.54) among subjects without a history of myocardial infarction. The risk of myocardial infarction varies with individual NSAIDs. An increased risk was observed for diclofenac and rofecoxib, the latter one with a clear dose-response trend. There was a suggestion of a small increased risk with ibuprofen. Also, data suggest a small reduced risk for naproxen present only in non-users of aspirin, mainly people free of clinically apparent vascular disease.

Spud's Snippets

5b. Do selective cyclo-oxygenase-2 inhibitors and traditional non-steroidal anti-inflammatory drugs increase the risk of atherothrombosis?

Meta-analysis of randomised trials

Patricia M Kearney, Colin Baigent, Jon Godwin, Heather Halls, Jonathan R Emberson and Carlo Patrono.

BMJ 2006;332:1302-1308. Full article available free from <http://www.bmj.com>

Objective: To assess the effects of selective cyclo-oxygenase-2 (COX 2) inhibitors and traditional non-steroidal anti-inflammatory drugs (NSAIDs) on the risk of vascular events.

Design: Meta-analysis of published and unpublished tabular data from randomised trials, with indirect estimation of the effects of traditional NSAIDs. Data sources Medline and Embase (January 1966 to April 2005); Food and Drug Administration records; and data on file from Novartis, Pfizer, and Merck.

Review methods: Eligible studies were randomised trials that included a comparison of a selective COX 2 inhibitor versus placebo or a selective COX 2 inhibitor versus a traditional NSAID, of at least four weeks' duration, with information on serious vascular events (defined as myocardial infarction, stroke, or vascular death). Individual investigators and manufacturers provided information on the number of patients randomised, numbers of vascular events, and the person time of follow-up for each randomised group.

Results: In placebo comparisons, allocation to a selective COX 2 inhibitor was associated with a 42% relative increase in the incidence of serious vascular events (1.2%/year v 0.9%/year; rate ratio 1.42, 95% confidence interval 1.13 to 1.78; P = 0.003), with no significant heterogeneity among the different selective COX 2 inhibitors. This was chiefly attributable to an increased risk of myocardial infarction (0.6%/year v 0.3%/year; 1.86, 1.33 to 2.59; P = 0.0003), with little apparent difference in other vascular outcomes. Among trials of at least one year's duration (mean 2.7 years), the rate ratio for vascular events was 1.45 (1.12 to 1.89; P = 0.005). Overall, the incidence of serious vascular events was similar between a selective COX 2 inhibitor and any traditional NSAID (1.0%/year v 0.9%/year; 1.16, 0.97 to 1.38; P = 0.1). However, statistical heterogeneity (P = 0.001) was found between trials of a selective COX 2 inhibitor versus naproxen (1.57, 1.21 to 2.03) and of a selective COX 2 inhibitor versus non-naproxen NSAIDs (0.88, 0.69 to 1.12). The summary rate ratio for vascular events, compared with placebo, was 0.92 (0.67 to 1.26) for naproxen, 1.51 (0.96 to 2.37) for ibuprofen, and 1.63 (1.12 to 2.37) for diclofenac.

Conclusions: Selective COX 2 inhibitors are associated with a moderate increase in the risk of vascular events, as are high dose regimens of ibuprofen and diclofenac, but high dose naproxen is not associated with such an excess.

Reviewer's comments: All clinicians involved in acute and chronic pain management will be aware of the events resulting in the withdrawal of rofecoxib from clinical use do to excess atherothrombotic events in patients treated with rofecoxib.

A new coxib, lumiricoxib, has recently been released in South Africa and another, etoricoxib, may be released next year. The atherothrombotic effects of coxibs seem to differ with rofecoxib having the greatest effect and celecoxib having the least effect. Lumiricoxib and etoricoxib have too little clinical data do be able to clearly delineate their risks. The surprising results of the meta-analyses above are that traditional NSAIDs like diclofenac and ibuprofen also have adverse atherothrombotic effects. Conversely, naproxen and ketorolac appear to maintain atherothrombotic protection but may increase the risk of bleeding.

6. Successful Use of a 20% Lipid Emulsion to Resuscitate a Patient after a Presumed Bupivacaine-related Cardiac Arrest

Meg A. Rosenblatt, Mark Abel, Gregory W. Fischer, Chad J. Itzkovich, James B. Eisenkraft, M.D.

Anesthesiology 2006; 105:217-8.

The infusion of a lipid emulsion has been shown to increase the survival rates of both rats and dogs that have been resuscitated after an overdose of bupivacaine. We report the first successful use of a 20% lipid infusion to resuscitate a patient from a prolonged cardiac arrest that immediately followed the placement of an interscalene block with bupivacaine and mepivacaine.

Reviewer's comment: While careful aspiration and incremental injection may substantially reduce the risk of intravascular injection of local anaesthetic, this risk remains less than zero. Single shot regional blocks (e.g. femoral and interscalene) are done with full strength local, close to major vessels. Resuscitation after intravascular injection of a long-acting amide local anaesthetic may require prolonged CPR and even bypass. Administration of Intralipid appears to be very efficacious in these cases. Intralipid should be immediately available where large-volume regional blocks are performed.

7. Early Access to Physical Therapy Treatment for Subacute Low Back Pain in Primary Health Care. A Prospective Randomized Clinical Trial.

Lena Nordeman, Bjorn Nilsson, Margareta Mollerand Ronny Gunnarsson.

Clin J Pain 2006;22:505–511.

Objectives: To evaluate the effects of early access (EA) to physical therapy treatment for patients with subacute low back pain compared to access with a 4-week waiting list.

Design: A prospective, randomized clinical trial. **Setting:** Primary health care. **Patients:** Sixty consecutive patients with subacute low back pain. **Interventions:** Patients were randomized either to EA within 2 days for physical examination and individualized physical therapy treatment (n=32) or a control group with a 4-week waiting list (n=28). **Outcome Measures:** Self-administered questionnaires were used for assessment at inclusion, at discharge, and at 6 months. Primary outcome measure was pain intensity assessed by Borg category scale for ratings of perceived pain. Secondary outcomes included the Orebro musculoskeletal pain screening questionnaire, the Roland and Morris disability questionnaire, sick leave, visits to health care, and physical therapy.

Results: The results showed no significant differences in pain between the groups at discharge. At 6 months, the reduction of pain was significantly greater in the EA group compared to the control group (P=0.025). Changes in secondary outcome measures were not significantly different between groups.

Conclusions: This study indicated that EA to physical therapy resulted in greater improvement in perceived pain at 6 months compared to later access. In this study, EA to physical therapy could be introduced by reorganization without additional resources.

Reviewer's comments: A referral for an epidural steroid injection is often the first opportunity for patients with low back pain to have an assessment by a pain practitioner. This article emphasizes the value of the involvement of a physiotherapist early in the process of treatment of low back pain. Maintenance of mobility is a key factor in successful rehabilitation of patients with back pain.

8. Neuraxial Anesthesia and Analgesia in Patients with Preexisting Central Nervous System Disorders

James R. Hebl, Terese T. Horlocker, Darrell R. Schroeder.

Anesth Analg 2006;103:223–8.

Historically, the use of regional anesthetic techniques in patients with preexisting central nervous system (CNS) disorders has been considered relatively contraindicated. The fear of worsening neurologic outcome secondary to mechanical trauma, local anesthetic toxicity, or neural ischemia is commonly reported. We examined the frequency of new or progressive neurologic complications in patients with preexisting CNS disorders who subsequently underwent neuraxial blockade. The medical records of all patients at the Mayo Clinic from the period 1988 to 2000 with a history of a CNS disorder who subsequently received neuraxial anesthesia or analgesia were retrospectively reviewed. One-hundred-thirty-nine (n = 139) patients were identified for study inclusion. Mean patient age was 60 ± 17 yr.

Gender distribution was 86 (62%) males and 53 (38%) females. An established CNS disorder diagnosis was present a mean of 23 ± 23 yr at the time of surgical anesthesia, with 74 (53%) patients reporting active neurologic symptoms. Spinal anesthesia was performed in 75 (54%) patients, epidural anesthesia or analgesia in 58 (42%) patients, continuous spinal anesthesia in 4 (3%) patients, and a combined spinal-epidural technique in 2 (1%) patients. Bupivacaine was the local anesthetic most commonly used in all techniques. Epinephrine was added to the injectate in 72 (52%) patients. There were 15 (11%) technical complications, with the unintentional elicitation of a paresthesia and traumatic needle placement occurring most frequently.

A satisfactory block was reported in 136 (98%) patients. No new or worsening postoperative neurologic deficits occurred when compared to preoperative findings (0.0%; 95% confidence interval, 0.0%–0.3%). We conclude that the risks commonly associated with neuraxial anesthesia and analgesia in patients with preexisting CNS disorders may not be as frequent as once thought and that neuraxial blockade should not be considered an absolute contraindication within this patient population.

Reviewer's comments: This article challenges another piece of anaesthetic dogma – that regional anaesthesia be avoided if a neurological lesion is present.

It is important that the extent of any neurological lesion be accurately quantified prior to the block. Patients should also be warned that direct surgical trauma and the stress response to surgery may result in worsening of their neurological status, independent of the effect of the block. This article should facilitate the carefully considered administration of regional anaesthesia in patients with problems such as multiple sclerosis and diabetic peripheral neuropathy. It is inappropriate to simply deny such patients the benefits of a regional block purely on the basis of their neurological lesion.