



PAIN MANAGEMENT October 2003

Ackerman, L. L., K. A. Follett, et al. (2003). "Long-term outcomes during treatment of chronic pain with intrathecal clonidine or clonidine/opioid combinations." Journal of Pain & Symptom Management **26**(1): 668-77.

To evaluate the effectiveness of intrathecal clonidine or clonidine/opioid admixture for the treatment of chronic pain states, a retrospective chart audit of 15 patients seen by the Pain Medicine and Neurosurgical Services was performed. Subjects included 9 men and 6 women aged 26-86 years. Diagnoses included complex regional pain syndrome, neuropathic pain, and cancer pain. All patients received a trial of single-shot and/or short-term infusion of clonidine. Those reporting a significant reduction in pain, or at least 50% reduction in their visual analog scale (VAS), received long-term therapy. Intrathecal clonidine as a single-shot dose, infusion, or as intrathecal polytherapy did not improve VAS scales from pre-treatment values in 5 patients. Ten patients reported significant pain relief or >50% decrease in VAS scores with the initial trial and received long-term therapy. Two received clonidine alone for 7-11 months before the therapy failed; others failed after just a few days. Seven of eight initially responded to clonidine alone (75-950 microg/day) before failing and requiring a second drug. Three received hydromorphone (200-8000 microg/day) and four morphine (0.15-15 mg/day) with clonidine. Four patients then failed 2-drug therapy (duration 6-21 months). Two continue with intrathecal clonidine/hydromorphone (duration 19-29 months) and 1 with clonidine/morphine (duration 21 months). After initiation of intrathecal clonidine, one patient reported good relief with clonidine/morphine until his death 5 months later. In this population, intrathecal clonidine was of limited utility for most patients. It may be of benefit for subset(s) of patients, but in our experience, duration of relief is typically <18 months.

Agarwala, N. and C. Y. Liu (2003). "Laparoscopic appendectomy." Journal of the American Association of Gynecologic Laparoscopists **10**(2): 166-8.

STUDY OBJECTIVE: To evaluate the effectiveness of laparoscopic appendectomy in women with chronic pelvic pain and to identify histopathology of the appendix. **DESIGN:** Retrospective review over 6.5 years (Canadian Task Force classification II-3). **SETTING:** Laparoscopic center and community hospital. **PATIENTS:** Three hundred seventeen women. **INTERVENTION:** Laparoscopic appendectomy in conjunction with other procedures. **MEASUREMENTS AND MAIN RESULTS:** Of 317 patients who underwent appendectomy, 14 (4.4%) had involvement of the appendix with endometriosis, 12 (3.78%) had early acute appendicitis, 4 (1.26%) had carcinoid tumors of the appendix, 2 (0.63%) had a large mucocele, and 1 (0.9%) each had *Enterobius vermicularis* infection, benign neuroma, and mucinous cystadenoma. Seventy-eight women (24.6%) had obliteration of the appendiceal lumen and 22 (6.93%) had entrapping fibrous

adhesions. Thirty-two patients (10%) reported relief of chronic pelvic pain in the absence of other pathology just by having diagnostic laparoscopy with appendectomy. CONCLUSION: The appendix is a key organ in the evaluation of undiagnosed chronic pelvic pain.

Alon, E., M. Jaquenod, et al. (2003). "Post-operative epidural versus intravenous patient-controlled analgesia." Minerva Anestesiologica **69**(5): 443-6.

Patient-controlled analgesia techniques have opened a new dimension to individualize patient's need for analgesia, in the treatment of acute post-operative pain. These techniques can be used intravenously, in the epidural space, and into peripheral nerve sheaths. There is a common consensus that intravenous patient-controlled analgesia should not have a continuous infusion while epidural patient-controlled analgesia (PCEA) should be programmed with a continuous infusion. The drugs used for epidural analgesia are: opioids, local anaesthetics or the combination of both. The combinations seem to provide better pain relief and less side effects. The continuous epidural infusion of opioids has the advantages of fewer fluctuations in cerebrospinal fluid concentrations of drug, but it is necessary to administer a loading bolus, to overcome the fact that it takes several hours to provide adequate analgesia. The advantages of epidural versus intravenous patient-controlled analgesia are represented by better analgesia and a reduced opioids requirement, while the advantages when compared to epidural continuous infusion are: increased efficiency, self-adjustment by the patient, higher patient satisfaction, less sedation, and lower opioids dosage. The clinical advantages of PCEA may outweigh the greater cost and invasiveness of this technique. [References: 6]

Alstergren, P. and J. Forstrom (2003). "Acute oral pain intensity and pain threshold assessed by intensity matching to pain induced by electrical stimuli." Journal of Orofacial Pain **17**(2): 151-9.

AIMS: To investigate a recently developed pain-intensity matching device (Painmatcher) in terms of reproducibility, pain intensity, and unpleasantness experienced by healthy individuals upon pain threshold assessment, as well as differences in pain threshold between genders and between healthy individuals and patients with acute oral pain, and the relation between pain-intensity assessments by the Painmatcher and a visual analog scale (VAS) in the patients. METHODS: Forty healthy individuals and 28 patients with acute oral pain participated. The Painmatcher produces an eventually noxious stimulus by increasing electrical impulses between 2 fingers. Pain thresholds were assessed twice in the healthy individuals and the provoked pain intensity and unpleasantness were recorded on a VAS. In the patients, pain threshold and ongoing pain were assessed with the Painmatcher and the ongoing pain was recorded on a VAS. RESULTS: Painmatcher scores for the 2 pain threshold assessments were equally correlated in the healthy individuals and patients. VAS scores for ongoing pain and pain caused by the Painmatcher when the ongoing pain intensity was assessed were positively correlated. In the healthy individuals, the degree of unpleasantness was higher than the pain intensity at the pain threshold. The patients had a lower pain threshold than the healthy individuals. CONCLUSION: This study indicates that patients with acute oral pain have lower Painmatcher pain thresholds than healthy individuals, suggesting a general decrease in nociceptive thresholds in these patients. The Painmatcher seems to be as valid as a VAS for acute oral pain assessment. The Painmatcher pain threshold is highly reproducible but associated with unpleasantness.

Anonymous (2003). "Back arthritis. Ways to manage the pain." Mayo Clinic Health Letter **21**(8): 1-3.

Anonymous (2003). "For the dental patient. Sensitive teeth: causes and treatment." Journal of the American Dental Association **134**(6): 787.

Anonymous (2003). "Pain medicine." Clinical Privilege White Paper(108): 1-8.

Aygun, D. and F. Bildik (2003). "Clinical warning criteria in evaluation by computed tomography the secondary neurological headaches in adults." European Journal of Neurology **10**(4): 437-42.

Our aims were to investigate the frequency of intracranial lesions detected by cranial computed tomography (CT-scan) amongst adult patients who had clinical warning criteria (CWC) for secondary neurological headaches and to determine the importance of CWC in predicting a possible lesion on CT-scan. Seventy consecutive patients with headache exhibiting CWC were included in this prospective study. The CWC included: (i) increase in the intensity and frequency of headache; (ii) abrupt onset of headache; (iii) persistence of headache despite analgesics; (iv) alteration of the characteristics of headache; and (v) presence of focal neurological symptoms or findings. The mean age of the patients was 46.5 years; the female-to-male ratio was 1.5. Of the patients, 35.7% had a neurological cause identified by CT-scan, and 64.3% had normal CT-scan. In the patients without lesion, of headaches, 64.4% were primary, and 35.6% were from undefined headache group. Although, of the above criteria, only the 5th was different markedly in the patients with lesion than the patients without lesion, in evaluation by CT-scan the secondary neurological headaches in adults, all CWC should look for absolutely in their history and physical examination.

Baggs, S. (2003). "Easing the pain of prostate care. Interview by Jennifer Taylor." Nursing Times **99**(26): 36-7.

Beilin, B., Y. Shavit, et al. (2003). "The effects of postoperative pain management on immune response to surgery." Anesthesia & Analgesia **97**(3): 822-7.

Surgery is associated with immune alterations, which are the combined result of tissue damage, anesthesia, postoperative pain, and psychological stress. In the present study, we compared the effects of several postoperative pain management techniques on postoperative immune function. Patients hospitalized for abdominal surgery were randomly assigned to one of three postoperative pain management techniques: opiates on demand (intermittent opiate regimen [IOR]), patient-controlled analgesia (PCA), and patient-controlled epidural analgesia (PCEA). Postoperative pain was assessed. Blood samples were collected before and 24, 48, and 72 h after surgery. Production of interleukin (IL)-1beta, IL-2, and IL-6, natural killer cell cytotoxicity, and lymphocyte mitogenic responses were assessed. Patients of the PCEA group exhibited lower pain scores in the first 24 h after surgery compared with patients of the IOR and PCA groups. Mitogenic responses were suppressed in all groups in the first 24 h, returned to preoperative values by 72 h in the PCEA group, but remained suppressed in the PCA group. Production of IL-1beta and IL-6 increased in the IOR and PCA groups, whereas it remained almost unchanged in the PCEA group. Patients receiving an epidural mixture of opiate and local anesthetics (PCEA group) exhibited reduced suppression of lymphocyte proliferation and attenuated proinflammatory cytokine response in the postoperative period.

Berger, A., E. Dukes, et al. (2003). "Use of oral and transdermal opioids among patients with metastatic cancer during the last year of life." Journal of Pain & Symptom Management **26**(2): 723-30.

This study documents the use of oral and transdermal opioids among patients with metastatic cancer during their final year of life. Using a large, integrated health-

insurance claims database, we identified all patients who had metastatic lung, breast, colorectal, prostate, or breast cancer and who also died in 1998 or 1999. We then examined all pharmacy claims for these patients over their final 12 months of life. A total of 2,132 patients were identified who met study entrance criteria. Among patients with bone metastases (n=717), 86.9% received opioids at some point during their final year of life; 71.2% of those without bone metastases (n=1,415) received them. Corresponding figures for long-acting opioids were 52.9% and 23.5%. Coverage ratios (total days supplied/total noninstitutionalized days) for any opioids and long-acting opioids were 25.1% and 12.5%, respectively, among patients with bone metastases, and 13.9% and 4.2% for those without bone metastases. During the final month of life, these ratios were 50.8% and 31.3%, and 28.7% and 13.1%. These relatively low rates of opioid use among patients with metastatic cancer in their final year of life suggest that pain in many cases may be suboptimally treated.

Bijsterveld, N. R., A. H. Moons, et al. (2003). "The impact on coagulation of an intravenous loading dose in addition to a subcutaneous regimen of low-molecular-weight heparin in the initial treatment of acute coronary syndromes." Journal of the American College of Cardiology **42**(3): 424-7.

OBJECTIVES: We sought to quantify the impact of adding an intravenous loading dose to a subcutaneous regimen of enoxaparin in patients with an acute coronary syndrome (ACS). **BACKGROUND:** It is unclear whether an intravenous (i.v.) loading dose of enoxaparin should be added to a subcutaneous (s.c.) regimen in patients with ACS. **METHODS:** Patients admitted with ACS were randomized to i.v.+s.c.(n = 14) or s.c. alone (n = 11) enoxaparin treatment. Coagulation markers were measured at nine time points during the first 24 h of treatment. **RESULTS:** The i.v.+s.c. therapy immediately resulted in therapeutic anti-Xa levels, which remained significantly higher for 6 h compared with s.c. alone, without reaching excessively high levels. A rapid decrease of plasma prothrombin fragments 1+2 (F(1+2)) levels was observed as soon as 5 min after the i.v. injection (33% lower; p = 0.007), and these levels remained lower up to 2 h after the start of treatment compared with SQ alone. The ex vivo thrombin generation time was maximally prolonged at 5 min post-injection in the i.v.+s.c. group and remained significantly prolonged up to 6 h post-injection compared with s.c. alone. The tissue factor pathway inhibitor plasma activity was immediately increased by 194% with i.v.+s.c., whereas the maximum increase with s.c. alone was 47% at 3 h. **CONCLUSIONS:** Therapeutic plasma levels of enoxaparin are achieved significantly earlier by an i.v.+s.c. regimen compared with s.c. alone, without leading to unacceptably high levels. As the risk of thrombotic complications is greatest early after admission, the observed differences in antithrombotic effects may translate into a clinical benefit. However, this remains to be established.

Bijur, P. E., C. T. Latimer, et al. (2003). "Validation of a verbally administered numerical rating scale of acute pain for use in the emergency department." Academic Emergency Medicine **10**(4): 390-2.

OBJECTIVES: Verbally administered numerical rating scales (NRSs) from 0 to 10 are often used to measure pain, but they have not been validated in the emergency department (ED) setting. The authors wished to assess the comparability of the NRS and visual analog scale (VAS) as measures of acute pain, and to identify the minimum clinically significant difference in pain that could be detected on the NRS. **METHODS:** This was a prospective cohort study of a convenience sample of adults presenting with acute pain to an urban ED. Patients verbally rated pain intensity as an integer from 0 to 10 (0 = no pain, 10 = worst possible pain), and marked a 10-cm horizontal VAS bounded by these descriptors. VAS and NRS data were obtained at presentation, 30 minutes later, and 60 minutes later. At 30 and 60

minutes, patients were asked whether their pain was "much less," "a little less," "about the same," "a little more," or "much more." Differences between consecutive pairs of measurements on the VAS and NRS obtained at 30-minute intervals were calculated for each of the five categories of pain descriptor. The association between VAS and NRS scores was expressed as a correlation coefficient. The VAS scores were regressed on the NRS scores in order to assess the equivalence of the measures. The mean changes associated with descriptors "a little less" or "a little more" were combined to define the minimum clinically significant difference in pain measured on the VAS and NRS. RESULTS: Of 108 patients entered, 103 provided data at 30 minutes and 86 at 60 minutes. NRS scores were strongly correlated to VAS scores at all time periods ($r = 0.94$, 95% CI = 0.93 to 0.95). The slope of the regression line was 1.01 (95% CI = 0.97 to 1.06) and the y-intercept was -0.34 (95% CI = -0.67 to -0.01). The minimum clinically significant difference in pain was 1.3 (95% CI = 1.0 to 1.5) on the NRS and 1.4 (95% CI = 1.1 to 1.7) on the VAS. CONCLUSIONS: The findings suggest that the verbally administered NRS can be substituted for the VAS in acute pain measurement.

Borene, S. C., R. W. Rosenquist, et al. (2003). "An indication for continuous cervical paravertebral block (posterior approach to the interscalene space)." Anesthesia & Analgesia **97**(3): 898-900.

Boulton, A. J. (2003). "Treatment of symptomatic diabetic neuropathy." Diabetes/Metabolism Research Reviews **19**(Suppl 1): S16-21.

Painful diabetic neuropathy is a common and particularly unpleasant long-term complication of diabetes that affects a significant minority of patients with distal polyneuropathy. After exclusion of other causes of neuropathic pain, attention should be focused on achieving optimal and stable glycaemic control avoiding flux of blood glucose levels, which have been shown to aggravate pain. Most patients will require pain control therapy and whilst the tricyclic drugs remain a first-line approach, their use is often hampered by predictable but troublesome side effects. Gabapentin, the only agent specifically licensed for the treatment of neuropathic pain in the United Kingdom, is useful in diabetic neuropathy and is generally better tolerated than the tricyclics. Additionally, other pharmacological and non-pharmacological pain management approaches may be useful. Patient education has a significant role to play in the avoidance of late neurological complications. Copyright 2003 John Wiley & Sons, Ltd. [References: 46]

Boureau, F., P. Legallicier, et al. (2003). "Tramadol in post-herpetic neuralgia: a randomized, double-blind, placebo-controlled trial." Pain **104**(1-2): 323-31.

The efficacy and safety of sustained-release tramadol compared to placebo in the treatment of post-herpetic neuralgia were evaluated in a multicenter, randomized, double-blind, parallel-group study in 127 outpatients. Treatment was administered for 6 weeks. The dose of tramadol could be increased from 100 mg/day to 400 mg/day (300 mg/day in patients more than 75 years old). Groups were compared on changes in pain intensity on a Visual Analogue Scale (VAS) between inclusion and the 6th week of treatment (covariance analysis as main analysis and repeated measures analysis as complementary analysis) in the per protocol (PP) population. The randomized population comprised 127 patients aged 35-85 years, mostly females (72.4%). Groups were comparable at inclusion both in the intent to treat (ITT) population (63 patients in the tramadol group and 62 patients in the placebo group) and in the PP population (53 patients in the tramadol group and 55 patients in the placebo group). Mean pain intensity on day 43 adjusted on day 1 (covariance analysis) was significantly lower in the tramadol group than in the placebo group in both the PP ($P=0.0499$), and the ITT ($P=0.031$) populations. The two groups significantly differed on change in pain intensity over time (repeated

measures analysis) in the ITT population ($P=0.012$). The percentage of pain relief over the 6th week was significantly higher in the tramadol group than in the placebo group ($P=0.017$). During the 6th week, patients in the tramadol group required less rescue medication than patients in the placebo group ($P=0.022$). No significant difference was found between groups either in pain intensity on a 5-point Verbal Scale (VRS) or in quality of life measurements. Tramadol was administered at an average dosage of 275.5 (89.7) mg/day after a 1-week dose-adaptation period. Tramadol was well tolerated. No notable difference appeared between groups either in the percentage of patients with treatment-associated adverse events (TAAE) (29.7% in the tramadol group and 31.8% in the placebo group) or in the total number of TAAE (31 in the tramadol group and 28 in the placebo group).

Bradbeer, M., R. D. Helme, et al. (2003). "Widowhood and other demographic associations of pain in independent older people." *Clinical Journal of Pain* **19**(4): 247-54.

OBJECTIVES: To determine if psychosocial factors, as suggested by the demographic variables of widowhood and living alone, are associated with pain, particularly severe pain, in a representative sample of independent older people. **DESIGN:** One thousand older people (65+) randomly selected from independent residents living in a major city were surveyed about their health status (Health Status of Older People Study). Demographic characteristics, including age, gender, education, income, living alone, widowhood, and childlessness, were analyzed by logistic regression for their association with pain report of differing severity. Path analysis was used to confirm the association with pain severity and further define the role of mood disturbance in mediating this relationship. **RESULTS:** The prevalence of any pain report for the preceding 12 months was 56.3%. This was reduced when using more restrictive criteria, such that moderate-to-severe pain "at worst" and "at present" was found in 48.7% and 4.1% of the sample, respectively. After adjusting for type 1 error rate, the status of living alone was primarily associated with moderate-to-severe pain at worst, and being a widow(er) was associated with moderate-to-severe pain at present. The latter association had an estimated odds ratio greater than 3 and was characterized by more recent bereavement. Using path analysis, the model that severe pain was secondary to mood disturbance of widowhood, particularly recent bereavement, was tested and confirmed. The model explained 17% of the variance of pain severity in widow(er)s. **CONCLUSION:** The mood disturbance related to spousal bereavement aggravates pain in older people. This lends support to the biopsychosocial model of pain.

Breen, A. and R. Breen (2003). "Back pain and satisfaction with chiropractic treatment: what role does the physical outcome play?" *Clinical Journal of Pain* **19**(4): 263-8.

OBJECTIVES: This study sought to determine what functional and affective outcomes had the most predictive value for overall satisfaction and improvement in patients seeking chiropractic treatment of low back pain. **METHOD:** Baseline questionnaires were completed by 965 patients seeking chiropractic help for low back pain, with blinded follow-up at 6 weeks. Patients were asked about effects on pain, anxiety, normal activity, work, depression, lifestyle, satisfaction, and overall improvement. Stepwise multiple regression analyses were used to evaluate the contribution of change scores to overall improvement and satisfaction. A 2-stage block regression was conducted to find out what additional factors besides overall improvement predicted patient satisfaction. **RESULTS:** There were weak to moderate, but highly significant, relationships between the change scores and both improvement and satisfaction. However, most of the variance (57%) in the latter was explained by overall improvement and a very small amount (0.5%) by improvements in activity, leaving nearly 43% unexplained by any of the variables.

Pain, work, and ability to control pain together predicted 27% of the variance in overall improvement. No other variables predicted this, leaving 73% of the variance unexplained. DISCUSSION: Pragmatic rather than affective variables played some part in predicting satisfaction through global improvement in these patients. This should help to inform future interpretation of clinical trials of chiropractic treatments for back pain. However, the nature of the "unknown" components needs further investigation. There are initial indications in the literature that information giving, and the reconfiguration of patients' perceptions of the problem, may contribute to patient satisfaction generally. Further work is needed to confirm this and to establish where such interventions can also contribute to overall improvement.

Brunat, G., Y. Pouzeratte, et al. (2003). "Posterior perineal block with ropivacaine 0.75% for pain control during and after hemorrhoidectomy." Regional Anesthesia & Pain Medicine **28**(3): 228-32.

BACKGROUND AND OBJECTIVES: As perioperative pain management is a difficult challenge during hemorrhoidectomy, we tested the hypothesis that posterior perineal block (PPB) with local anesthetics alone is able to provide adequate pain control during and after surgery. METHODS: In a prospective, blinded, randomized study, we studied analgesic conditions and side effects of PPB in American Society of Anesthesiologists (ASA) I-II patients undergoing hemorrhoidectomy. Patients received general anesthesia (GA) either with PPB (0.75% ropivacaine, 40 mL (PPB group) or without PPB (control group). All patients received intravenous morphine patient-controlled analgesia (PCA) for postoperative pain control (morphine, 1.5 mg-boluses, 8-minute lockout interval). Intra- and postoperative opioids consumption was recorded, and pain assessments were performed at 1, 2, 4, 8, 12, and 24 hours using a visual analog scale (VAS). RESULTS: VAS scores were significantly lower during the first 8 postoperative hours in the PPB group as compared with the control group ($P < .001$). The PPB group required significantly less opioids during anesthesia ($P < .001$) and during the first postoperative day ($P < .001$) as compared with the control group. Time to first defecation and duration of hospitalization were identical in both groups. CONCLUSIONS: The present study shows that PPB with 40 mL 0.75% ropivacaine (300 mg) was a simple, effective, and safe method to provide better postoperative analgesia than PCA alone following surgical hemorrhoidectomy. In addition, PPB was shown to significantly reduce opioid consumption intraoperatively and during the first postoperative day.

Buckenmaier, C. C., 3rd, S. M. Klein, et al. (2003). "Continuous paravertebral catheter and outpatient infusion for breast surgery." Anesthesia & Analgesia **97**(3): 715-7.

Cara, D. M., A. M. Norris, et al. (2003). "Pain during awake nasal intubation after topical cocaine or phenylephrine/lidocaine spray." Anaesthesia **58**(8): 777-80.

Although several local anaesthetic techniques are described for nasal analgesia during awake intubation, there has been little attempt to evaluate their effectiveness. We examined pain scores associated with nasal intubation in a randomised cross-over study of 25 volunteers. Local anaesthesia consisted of topical aerosol spray using either cocaine 5% or Co-phenylcaine Forte (a proprietary mixture of phenylephrine hydrochloride 0.5% and lidocaine hydrochloride 5%), followed by lidocaine gel. Topical anaesthesia using an atomiser resulted in incomplete analgesia for insertion of nasopharyngeal airways. Larger diameter tubes resulted in higher pain scores. There was no difference in pain scores between the two drugs.

Carbonell, A. M., K. L. Harold, et al. (2003). "Local injection for the treatment of suture site pain after laparoscopic ventral hernia repair." American Surgeon **69**(8): 688-91; discussion 691-2.

Transabdominal sutures (TAS) used for mesh fixation in laparoscopic ventral hernia repair (LVHR) are an occasional source of prolonged postoperative pain. We sought to analyze the incidence of TAS site pain and the efficacy of local treatment methods. A retrospective review of patients who underwent LVHR from January 1999 to August 2002 was performed to identify patients experiencing suture site pain. Patients were considered candidates for injection therapy if their discomfort lasted 10 days postoperatively. Patient demographics, hernia size, mesh size, and subjective pain intensity were recorded. Treatment consisted of injection circumferentially around the suture site with 0.25 per cent bupivacaine with one to 200,000 epinephrine and 1 per cent lidocaine at the level of the abdominal musculature. Statistical ($P < 0.05$) significance was determined by chi-square, logistic regression, and analysis of variance. One hundred three patients (42 men and 61 women) with a mean age of 53 years (range 26-78) and weight of 99.8 kg (range 61-239) underwent LVHR. Mean hernia size was 192 cm² (range 12-450) and mean size of mesh placed measured 534 cm² (range 100-1200). Twenty-four patients (23%) complained of prolonged discomfort at a transabdominal suture site and were injected postoperatively in the office as described. Of these 58 per cent were female and 42 per cent were male. Logistic regression demonstrated increasing mesh size was the only factor ($P < 0.01$) that correlated with the need for injection. Twenty-two of 24 patients (92%) undergoing injection therapy had complete relief of their symptoms. Twenty patients required a single injection and two patients required two injections to treat their TAS site pain. After local injection failure two patients were referred to an anesthesia pain service; one underwent intercostal nerve block with complete resolution of pain, while the other is currently in treatment. There were no complications. Suture site pain was present after LVHR in 23 per cent of our patients. Increasing mesh size is associated with a greater chance of suture site pain. It appears to be effectively treated postoperatively with the injection of a local anesthetic at the TAS site. The mechanisms by which short-duration anesthetics relieve chronic pain are not fully understood.

Cerfolio, R. J., T. N. Price, et al. (2003). "Intracostal sutures decrease the pain of thoracotomy." Annals of Thoracic Surgery **76**(2): 407-11; discussion 411-2.

BACKGROUND: General thoracic surgeons spend much time dealing and treating patients' pain after thoracotomy. **METHODS:** Two hundred eighty consecutive patients underwent elective thoracotomy for pulmonary resection. Patients with a history of chronic pain were excluded. One general thoracic surgeon performed all procedures. All patients had a functioning preoperative epidural, a skin incision the width of their latissimus dorsi muscle which was cut, sparing of the serratus anterior muscle, undercutting of the rib, preemptive analgesia of the intercostal nerve before rib spreading, and similar number of chest tubes and postoperative pain management. The first 140 patients had their chests closed with pericostal sutures (stitches placed on top of the fifth rib and on top of the seventh rib), and the next 140 patients had their chest closed with intracostal sutures (stitches placed on top of the fifth rib and through the small holes drilled in the bed of the sixth rib). Pain was objectified by a numeric pain score and by the McGill pain questionnaire at 2 weeks, and 1, 2, and 3 months postoperatively. **RESULTS:** There were 140 patients in each group, and the groups were matched for age, gender, race, types of pulmonary resections, number of chest tubes, number of broken ribs, length of chest tube duration, and length of hospital stay ($p > 0.05$ for all). The mean pain score for the pericostal group (P group) at 2 weeks, 1 month, 2 months, and 3 months postoperatively was 5.5, 3.8, 2.3, and 1.6, respectively. For the intracostal group it was 3.3, 1.7, 1.1, and 0.6, respectively ($p = 0.004$, $p = 0.0001$,

$p < 0.0001$, and $p < 0.0001$, respectively). Descriptors of pain in the P group were more likely to be, hot/burning, shooting or stabbing ($p < 0.003$). CONCLUSIONS: Intracostal sutures seem to be less painful than pericostal sutures at 2 weeks, 1 month, 2 months, and 3 months after thoracotomy. The pain is less likely to be described as burning or shooting.

Chambler, A. F. and A. J. Carr (2003). "The role of surgery in frozen shoulder." Journal of Bone & Joint Surgery - British Volume **85**(6): 789-95.

Chan, G. W., F. D. Sites, et al. (2003). "Impact of stress testing on 30-day cardiovascular outcomes for low-risk patients with chest pain admitted to floor telemetry beds." American Journal of Emergency Medicine **21**(4): 282-7.

The role of immediate stress testing in low-risk patients with a potential acute coronary syndrome has not been rigorously evaluated with respect to impact on 30-day cardiovascular events. We evaluated the impact of inpatient, outpatient, or no stress testing (ETT) on 30-day cardiovascular outcomes. We performed a prospective cohort study in which consecutive patients with chest pain were admitted to a non-intensive-care telemetry bed over 16 months. Patients were identified in the ED, followed daily through hospitalization, and contacted by telephone at 30 days. Patients were excluded if they were admitted to the coronary care unit, died during hospitalization, sustained an acute myocardial infarction (AMI), or received cardiac catheterization before ETT. Patients were stratified according to whether they received an ETT as an inpatient, outpatient, or no ETT. Main outcomes were 30-day cardiac death, AMI, percutaneous interventions (PCI), and coronary artery bypass graft surgery (CABG). Data are presented as percentages with 95% confidence intervals (CI) for main outcomes. A total of 832 patients were admitted 962 times. A total of 205 patients (21%) received an in-house ETT. Seventy-four patients (10%) without an inpatient ETT received an outpatient ETT. At baseline, the groups were similar with respect to likelihood of ischemia based on mean ACI-TIPI score and Goldman risk score. A total of 98% of patients had 30-day follow-up. The cardiovascular outcomes (with 95% confidence interval) for patients with inpatient ETT versus outpatient ETT versus no ETT were as follows: death, 0% (0-1.5%) vs 0% (0-4.1%) vs 1% (0.3-1.7%); AMI, 1% (0.1-2.4%) vs 1.4% (0.1-4.1%) vs 0.3% (0.1-0.7%); PCI, 0.5% (0.1-1.5%) vs 1.3% (0.1-4.1%) vs 0% (0-0.4%); and CABG, 0.5% (0.1-1.5%) vs 0% (0-4.1%) vs 0.2% (0.1-0.4%). There was no statistical difference in 30-day cardiovascular outcomes among patients who received inpatient, outpatient, or no ETT within 30 days. This suggests that patients with chest pain who are admitted to non-intensive-care telemetry (or observation unit) beds might not need stress testing before hospital release.

Cheema, S., J. Richardson, et al. (2003). "Factors affecting the spread of bupivacaine in the adult thoracic paravertebral space." Anaesthesia **58**(7): 684-7.

Factors affecting the spread of bupivacaine in the paravertebral space were investigated in patients undergoing paravertebral nerve blocks for the treatment of chronically painful conditions. Injections of bupivacaine 0.5%, 10-15 ml mixed with depomedrone up to 80 mg were repeated at 2-wk intervals up to a maximum of four times. A blinded observer mapped out the subsequent distribution of sensory loss to cold on both sides of the torso at 5-min intervals after each injection. Age, sex, height and weight did not correlate with the block; nor did injectate volume, mass of bupivacaine, previous posterolateral thoractomy and spread of radiocontrast. Injections repeated at 2-wk intervals in the same patient resulted in different degrees of spread that were unrelated to one another. Time to peak onset of blockade was 40 min in 95% of patients. A single bolus of bupivacaine produces a safe but unpredictable block. Yet to be defined physical properties and anatomical factors are probably key determinants of the spread of bupivacaine in the

paravertebral space. This single bolus technique may be better supplanted by a reversion to the older multiple level injection technique.

Cheeseman, G. A. and A. Chojnowski (2003). "Use of adrenaline and bupivacaine to reduce bleeding and pain following harvesting of bone graft." Annals of the Royal College of Surgeons of England **85**(4): 284.

Childs, J. D., J. M. Fritz, et al. (2003). "Clinical decision making in the identification of patients likely to benefit from spinal manipulation: a traditional versus an evidence-based approach." Journal of Orthopaedic & Sports Physical Therapy **33**(5): 259-72.

Choi, P. T., M. Bhandari, et al. (2003). "Epidural analgesia for pain relief following hip or knee replacement." Cochrane Database of Systematic Reviews(3): CD003071.

BACKGROUND: Hip and knee replacement are common operative procedures to improve mobility and quality of life. Adequate pain relief is essential in the postoperative period to enable ambulation and initiation of physiotherapy. Lumbar epidural analgesia is a common modality for pain relief following these procedures. However, there is no systematic review of the evidence comparing the efficacy of epidural analgesia with other postoperative analgesic modalities. As the use of epidural analgesia may delay the initiation of anticoagulant thromboprophylaxis due to the potential risk of epidural hematoma, a synthesis of the evidence is necessary to determine whether or not alternative analgesic modalities are worse, equivalent, or better than epidural analgesia. **OBJECTIVES:** Our objective is to answer the question: "Is lumbar epidural analgesia more efficacious than systemic analgesia or long-acting spinal analgesia for postoperative pain relief in patients after elective hip or knee replacement?" **SEARCH STRATEGY:** MEDLINE, EMBASE, CINAHL, LILACS, and the Cochrane Controlled Trials Register were searched from their inception to June 2001. Reference lists of review articles and included studies were also reviewed for additional citations. **SELECTION CRITERIA:** A study was included if it was a randomized or pseudo randomized controlled clinical trial of patients undergoing hip or knee replacement, in which postoperative lumbar epidural analgesia was compared to other methods for pain relief. Study selection was performed unblinded in duplicate. **DATA COLLECTION AND ANALYSIS:** Data were collected unblinded in duplicate. Information on the patients, methods, interventions, outcomes (pain relief, postoperative function, length of stay) and adverse events were recorded. Methodological quality was assessed using a validated 5-point scale. Meta-analysis was conducted when sufficient data existed from two or more studies. Heterogeneity testing was performed using the Breslow-Day method. The fixed effects model was used unless heterogeneity was present, in which case, a random effects model was used. Continuous data were summarized as weighted mean differences (WMD) or standardized mean differences (SMD) with 95% confidence intervals (CI). Dichotomous data were summarized as odds ratios (OR) and numbers-needed-to-treat (NNT) or numbers-needed-to-harm (NNH) with their respective 95% CI. Graphical representation of continuous data used the MetaView program. **MAIN RESULTS:** In the first four to six hours after surgery, patients receiving epidural analgesia had less pain at rest, based on visual analog scores (VAS), than patients receiving systemic analgesia (SMD -0.77; 95% CI -1.24 to -0.31). This effect was not statistically significant by 18 to 24 hours (SMD -0.29; 95% CI -0.73 to 0.16). These observations were based only on studies evaluating populations consisting of total knee replacements alone or mixed populations of total hip or total knee replacements. For pain relief with movement after surgery, patients receiving epidural analgesia reported lower pain scores than patients receiving systemic analgesia in all four studies examining these outcomes. The choice of epidural agents may also influence the extent to which epidural analgesia differs from systemic

analgesia. The differences between epidural analgesia and systemic analgesia in the frequency of nausea and vomiting (OR 0.95; 95% CI 0.60 to 1.49) or depression of breathing (OR 1.07; 95% CI 0.45 to 2.54) were not statistically significant. Sedation occurred less frequently with epidural analgesia (OR 0.30; 95% CI 0.09 to 0.97) with a number-needed-to-harm of 7.7 (95% CI 3.5 to 42.0) patients for the systemic analgesia group. Retention of urine (OR 3.50, 95% CI 1.63 to 7.51; NNH 4.5, 95% CI 2.3 to 12.2), itching (OR 4.74, 95% CI 1.76 to 12.78; NNH 6.8, 95% CI 4.4 to 15.8), and low blood pressure (OR 2.78, 95% CI 1.15 to 6.72; NNH 6.7, 95% CI 3.5 to 103) were more frequent with epidural analgesia compared to systemic analgesia. There were insufficient numbers to draw conclusions on

Chrubasik, S., C. Conradt, et al. (2003). "Different views of health care professionals on the treatment of osteoarthritis including low back pain." Rheumatology **42**(8): 1020-1.

Cohen, R. A., R. Paul, et al. (2001). "Emotional and personality changes following cingulotomy." Emotion **1**(1): 38-50.

The effects of bilateral anterior cingulate cortex (ACC) lesions on emotional and personality functioning were studied. Patients undergoing cingulotomy for chronic intractable pain were assessed on the Minnesota Multiphasic Personality Inventory (MMPI), the Profile of Mood States (POMS), cognitive tests, and pain ratings, pre- and postsurgically. Patients with intractable pain, not treated with cingulotomy, served as controls. Cingulotomy patients experienced reductions in POMS-Tension, POMS-Anger, and MMPI Scale 7 (Psychasthenia) compared with baseline and the controls. POMS-Tension was significantly correlated with attention-intention performance. The results indicate that the ACC modulates emotional experience, related to self-perceived tension, and that there is relationship between the emotional and the attentional effects of cingulotomy.

Correia, L. C., A. C. Sposito, et al. (2003). "Anti-inflammatory effect of atorvastatin (80 mg) in unstable angina pectoris and non-Q-wave acute myocardial infarction." American Journal of Cardiology **92**(3): 298-301.

In this randomized trial, C-reactive protein increased during the first 5 days of an acute coronary syndrome in patients treated with placebo, but this phenomenon was not observed in those randomized to atorvastatin 80 mg/day. This suggests that short-term statin therapy inhibits inflammation in patients with non-ST-elevation acute coronary syndromes.

Crawford, F. and C. Thomson (2003). "Interventions for treating plantar heel pain.[update of Cochrane Database Syst Rev. 2000;(3):CD000416; PMID: 10908473]." Cochrane Database of Systematic Reviews(3): CD000416.

BACKGROUND: Ten percent of people may experience pain under the heel (plantar heel pain) at some time. Injections, insoles, heel pads, strapping and surgery have been common forms of treatment offered. The absolute and relative effectiveness of these interventions are poorly understood. **OBJECTIVES:** The objective of this review was to identify and evaluate the evidence for effectiveness of treatments for plantar heel pain. **SEARCH STRATEGY:** We searched the Cochrane Musculoskeletal Injuries Group specialised register (September 2002), the Cochrane Central Register of Controlled Trials Register (The Cochrane Library issue 3, 2002), MEDLINE (1966 to September 2002), EMBASE (1988 to September 2002) and reference lists of articles and dissertations. Four podiatry journals were handsearched to 1998. We contacted all UK schools of podiatry to identify dissertations on the management of heel pain, and investigators in the field to identify unpublished data or research in progress. No language restrictions were applied. **SELECTION CRITERIA:** Randomised and quasi-randomised trials of

interventions for plantar heel pain in adults. DATA COLLECTION AND ANALYSIS: Two reviewers independently evaluated randomised controlled trials for inclusion, extracted data and assessed trial quality. Additional information was obtained by direct contact with investigators. No poolable data were identified. Where measures of variance were available we have calculated the weighted mean differences based on visual analogue scale (VAS) scores. MAIN RESULTS: Nineteen randomised trials involving 1626 participants were included. Trial quality was generally poor, and pooling of data was not conducted. All trials measured heel pain as the primary outcome. Seven trials evaluated interventions against placebo/dummy or no treatment. There was limited evidence for the effectiveness of topical corticosteroid administered by iontophoresis, i.e using an electric current, in reducing pain. There was some evidence for the effectiveness of injected corticosteroid providing temporary relief of pain. There was conflicting evidence for the effectiveness of low energy extracorporeal shock wave therapy in reducing night pain, resting pain and pressure pain in the short term (6 and 12 weeks) and therefore its effectiveness remains equivocal. In individuals with chronic pain (longer than six months), there was limited evidence for the effectiveness of dorsiflexion night splints in reducing pain. There was no evidence to support the effectiveness of therapeutic ultrasound, low-intensity laser therapy, exposure to an electron generating device or insoles with magnetic foil. No randomised trials evaluating surgery, or radiotherapy against a randomly allocated control population were identified. There was limited evidence for the superiority of corticosteroid injections over orthotic devices. REVIEWER'S CONCLUSIONS: Although there is limited evidence for the effectiveness of local corticosteroid therapy, the effectiveness of other frequently employed treatments in altering the clinical course of plantar heel pain has not been established in randomised controlled trials. At the moment there is limited evidence upon which to base clinical practice. Treatments that are used to reduce heel pain seem to bring only marginal gains over no treatment and control therapies such as stretching exercises. Steroid injections are a popular method of treating the condition but only seem to be useful in the short term and only to a small degree. Orthoses should be cautiously prescribed for those patients who stand for long periods; there is limited evidence that stretching exercises and heel pads are associated with better outcomes than custom made orthoses in people who stand for more than eight hours per day. Well designed and conducted randomised trials are required. [References: 40]

Criste, A. (2003). "Do nurse anesthetists demonstrate gender bias in treating pain? A national survey using a standardized pain model." *AANA Journal* **71**(3): 206-9.

A major responsibility of the nurse anesthetist is providing adequate pain relief. Current research suggests that provider gender, as well as patient gender, may affect the clinical assessment and treatment of pain. Implications of the undertreatment of pain may be avoided if the anesthetist is aware of potential gender bias when approaching a given clinical situation. A postoperative pain scenario and questionnaire regarding proposed pain management was mailed to a random sample of 450 currently practicing Certified Registered Nurse Anesthetists (CRNAs). Data were analyzed descriptively and qualitatively; 59 female and 74 male CRNAs responded (n = 133). Analgesic medication was used by 131 anesthetists; 124 of these used opiates. Significantly more male CRNAs (P < .05; chi 2) administered benzodiazepines along with the analgesic (21/74 [28%]) than did female CRNAs (11/59 and 2 over black square); [1 and 2 over black square]9%]; male CRNAs were more likely to administer benzodiazepines as part of their clinical management of cases involving males (13/38[34%]) than female patients (8/36 [22%]); however, this difference was not significant. Pain treatment strategies were indistinguishable between male and female anesthetists, as well as between male and female patients. However, gender-based differences in the use of sedation medication in concert with analgesic medication was an unexpected finding.

De Andres, J., G. Cerda-Olmedo, et al. (2003). "Use of botulinum toxin in the treatment of chronic myofascial pain." Clinical Journal of Pain **19**(4): 269-75.

BACKGROUND: Myofascial pain syndrome (MPS) is defined as acute or chronic pain with sensory or motor autonomic symptoms, referred from active myofascial triggering points with associated dysfunction. Previous studies have suggested the usefulness of botulinum toxin A (BTX-A) in the treatment of MPS since it is capable of controlling muscular spasms, as well as other alternative mechanisms of action. **OBJECTIVES:** To analyze the efficacy of BTX-A treatment and its effect on daily life activities assessing pain reduction using a visual analogue scale (VAS); degree of improvement in physical impairment and disability scoring in the Oswestry low back pain questionnaire; and psychologic status using the Hospital Anxiety and Depression Scale (HAD), in patients suffering from MPS. **METHOD:** An open-label interventional prospective trial was conducted in 77 patients diagnosed of refractory MPS (defined as the presence of muscle spasm with pain on mobilization or stretching, plus the existence of trigger points with associated referred pain), resistant to both conservative management and to physical therapy. The BTX-A dosages for the different muscles were chosen according to a standardized protocol. Electromyographic guidance was used to localize the motor end plate prior to injection in superficial muscles; while fluoroscopic guidance was employed to evidence intramyofascial spread of the contrast solution within deep muscles. The assessment of treatment efficacy was based on a pain VAS applied before enrollment, at 15, 30, and 90 days and upon completion of the study; the Lattinen test to establish a relationship between pain intensity and its corresponding impact on daily living; and the HAD scale to assess psychologic stress, performed both before treatment and at the end of the study; and the Oswestry Questionnaire was used to evaluate patients' ability to carry out daily life activities according to their degree of physical impairment and disability scores. **RESULTS:** The global analysis revealed a positive correlation between the VAS score prior to treatment and the scoring at 15, 30, and 90 days. This correlation was maintained when analyzing independently for superficial or deep muscles. The correlation coefficients for HAD scores and the Lattinen test values showed a significant association between pre- and post-treatment findings. No adverse events were recorded for 83.1% of the cases. **CONCLUSIONS:** The results of this study are consistent with other studies showing the efficacy of BTX-A for treating pain in MPS. The evaluation of the psychologic dimension of this disorder and its associated disability can provide valuable information for the adequate management of these patients and for assessing treatment outcome.

Dearnaley, D. P., M. R. Sydes, et al. (2003). "A double-blind, placebo-controlled, randomized trial of oral sodium clodronate for metastatic prostate cancer (MRC PR05 Trial).[comment]." Journal of the National Cancer Institute **95**(17): 1300-11.

BACKGROUND: The most frequent site of metastases from prostate cancer is bone. Bisphosphonates reduce excessive bone turnover while preserving bone structure and mineralization in patients with other tumor types. We conducted a double-blind, placebo-controlled, randomized trial to determine whether the first-generation bisphosphonate sodium clodronate could improve bone progression-free survival (BPFS) times among men with bone metastases from prostate cancer. **METHODS:** Between June 1994 and July 1998, 311 men who were starting or responding to first-line hormone therapy for bone metastases were randomly assigned to receive oral sodium clodronate (2080 mg/day) or placebo for a maximum of 3 years. The primary endpoint of the trial was symptomatic BPFS. Secondary endpoints included overall survival, treatment toxicity, and change in World Health Organization (WHO) performance status. Time-to-event data were analyzed using the log-rank chi-square test and Kaplan-Meier curves. All statistical

tests were two-sided. RESULTS: Baseline characteristics were balanced across the two groups. After a median follow-up of 59 months, the sodium clodronate group showed statistically nonsignificant better symptomatic BPFs (hazard ratio [HR] = 0.79, 95% confidence interval [CI] = 0.61 to 1.02; P = .066) and overall survival (HR = 0.80, 95% CI = 0.62 to 1.03; P = .082) than the control group. Patients in the clodronate group were less likely to have a worsened WHO performance status (HR = 0.71, 95% CI = 0.56 to 0.92; P = .008). However, the clodronate group reported more gastrointestinal problems and increased lactate dehydrogenase levels and required more frequent modification of the trial drug dose (HR for any adverse event = 1.71, 95% CI = 1.21 to 2.41; P = .002). Results of subgroup analyses suggested that clodronate might be more effective the sooner after diagnosis of metastatic bone disease it is started. CONCLUSION: These results suggest that further studies of the effect of newer generation bisphosphonates on BPFs in men with metastatic prostate cancer are warranted.

Dowson, A. J. (2003). "Analysis of the patients attending a specialist UK headache clinic over a 3-year period." *Headache* **43**(1): 14-8.

OBJECTIVE: This study analyzed the profile of patients who attended a specialist UK headache clinic over a 3-year period. METHODS: An audit was conducted of the clinical records of patients attending the specialist headache clinic at King's College, London, between January 1997 and January 2000. Data were collected for diagnoses given, current medications taken, medications prescribed and recommended, and investigations conducted. Results were calculated as numbers and proportions of patients for the 3-year period and for the 3 separate 12-month periods. RESULTS: A total of 458 patients were included in the audit. Most patients were diagnosed as having chronic daily headache (CDH, 60%) or migraine (33%). Prior to the clinic visit, most patients with CDH and migraine treated their headaches with analgesics, and there was little use of prophylactic medication. In the clinic, 74% of patients with CDH and 85% of migraineurs were prescribed prophylactic medication, and 81% of migraineurs were given triptans for acute treatment. Diagnostic testing was performed in 12% of the patients, and all results were normal or negative. CONCLUSIONS: CDH and migraine were the most common headache types encountered in this UK secondary-care clinic. Review of treatment patterns used prior to the initial clinic evaluation suggests that management of CDH and migraine in UK primary care is suboptimal, and educational initiatives are needed to improve headache management.

Eder, S. C., E. P. Sloan, et al. (2003). "Documentation of ED patient pain by nurses and physicians." *American Journal of Emergency Medicine* **21**(4): 253-7.

The purpose of this study was to evaluate ED documentation of patient pain in light of the Joint Commission of Accreditation of Healthcare Organization's emphasis on pain assessment and management. A prospectively designed pain management survey was offered to patients on ED discharge. Documentation of pain intensity by ED nurses and physicians was retrospectively reviewed. Of 302 patients surveyed, 261 (86%) complete charts were available for review. Initial pain assessments were noted on 94% of the charts, but a pain scale was used for only 23% of the patients. Documentation of pain subsequent to therapy was noted on 39% of the charts, but a pain scale was used only 19% of the time. Subsequent to therapy, nurses were 2.2 x more likely to document pain assessments than physicians (30% vs 16%, P < .001). Patients with severe pain on arrival (46% vs 31%, odds ratio [OR] = 1.9, P < .02), chest pain (72% vs 32%, OR = 5.4, P < .001), or those receiving powerful analgesics (62% vs 32%, 3.5, P < .001) were more likely to receive a documented subsequent pain assessment than other patients. Pain severity is not consistently documented in ED patients, especially after therapy has

been provided. Patients with severe pain and those receiving powerful analgesics were more likely to have a pain assessment subsequent to ED therapy.

Edwards, R., E. Augustson, et al. (2003). "Differential relationships between anxiety and treatment-associated pain reduction among male and female chronic pain patients." Clinical Journal of Pain **19**(4): 208-16.

OBJECTIVES: Clinical, epidemiological, and laboratory-based studies have all suggested that female sex and elevated anxiety are associated with greater experience of pain. However, several recent reports have also indicated that sex may moderate the relationship between anxiety and responses to noxious stimuli, with anxiety more strongly related to pain among males. The present study examined whether anxiety differentially impacts outcomes for pain treatment among males and females. METHODS: Seventy-four chronic pain patients (34 males, 40 females) completed the Pain Anxiety Symptoms Scale and several other psychologic measures before undergoing a variety of treatment procedures including epidural steroids, trigger point injections, and participation in brief, cognitive-behaviorally oriented psychoeducational groups. Patients provided pre- and post-treatment ratings of pain for all interventions. RESULTS: Consistent with findings from previous investigations, the present study noted stronger relationships between baseline anxiety and pre-treatment pain severity among males relative to females. In addition, while lower levels of baseline anxiety were related to greater treatment-associated pain reduction among females, the reverse pattern emerged for males. These relationships persisted even after controlling for other psychologic factors such as depression, coping style, and hypervigilance. DISCUSSION: These findings suggest differential relationships between anxiety and pain relief as a function of sex. While we are unable to identify a mechanism for this effect, higher anxiety may have predicted more pain relief among males and less pain relief among females due to sex differences in coping strategies or placebo effects.

Eser, D., P. Zwanzger, et al. (2003). "Carbamazepine treatment of adverse psychiatric effects after treatment with the nonsteroidal anti-inflammatory drug piroxicam." Journal of Clinical Psychiatry **64**(7): 852-4.

Etlin, D., A. Mailis-Gagnon, et al. (2003). "Re: Gale G, Nussbaum D, Rothbart P, Hann B, Leung V, Kanetz G. A randomized treatment study to compare the efficacy of repeated nerve blocks with cognitive therapy for control of chronic head and neck pain. Pain Res Manage 2002;7:185-9; and Merskey H, Thompson EN. Nerve blocks and cognitive failure: A beneficial failure. Pain Res Manage 2002;7:175-6.[comment]." Pain Research & Management **8**(2): 107-8.

Fazzone, H. E., D. R. Lefton, et al. (2003). "Optic neuritis: correlation of pain and magnetic resonance imaging." Ophthalmology **110**(8): 1646-9.

PURPOSE: To demonstrate whether the magnetic resonance imaging (MRI) localization of the abnormal enhancement of the optic nerve can be related to the pain or pattern of visual field loss associated with acute optic neuritis. DESIGN: Retrospective observational series and MRI review from a referral neuro-ophthalmology service. PARTICIPANTS: Seventy-three women and 23 men with acute optic neuritis who had high resolution gadolinium-enhanced fat-suppressed MRI within twenty days of the onset of visual loss. METHODS: The presence of eye or other fifth cranial nerve (V(1)) pain, and pain with eye movement ipsilateral to the affected optic nerve or no eye pain was recorded. The neuroradiologist reviewed the MRI, masked to the affected eye, and recorded the length and segment (orbital, canalicular, intracranial, or combination of segments) of abnormal optic nerve enhancement. The presenting visual field defects were characterized as diffuse, central, arcuate, nasal or temporal. MAIN OUTCOME MEASURES: The types of pain

and patterns of field loss were correlated with the segments of optic nerve enhancement in the affected eye. RESULTS: Five patients had nerves that did not enhance and were excluded from the outcome analysis. In the 91 patients with abnormal enhancement, 70 experienced eye/V(1) pain, 67 had pain with eye movement and 17 patients had no pain. Enhancement of the orbital optic nerve occurred in 66 patients, 93.9% who had eye/V(1) pain and 92.4% who had pain with eye movement. In the 25 patients with enhancement of the canalicular, intracranial or both segments, without orbital involvement, 32% had eye/V(1) pain and 24% had pain with eye movement. No pain occurred in 3% with enhancement of the orbital segment and in 60% with enhancement of the other optic nerve segments. The length of enhancement moderately correlated with eye/V(1) pain ($r = 0.49$, $P = 0.01$) and pain with eye movement ($r = 0.37$, $P = 0.01$). Patients with enhancement longer than 10 mm had pain five times ($P = 0.004$) more frequent than did those with enhancement ≤ 10 mm. There was no significant specific pattern of field loss associated with a particular location of enhancement, except temporal field loss occurred in 25% of intracranial lesions ($P = 0.04$). CONCLUSION: When optic neuritis involved the orbital segment of the optic nerve, eye or other V(1) distribution pain (94.3% vs. 32%) and pain with eye movement (91.4% vs. 24%) were significantly more frequent. In contrast, pain was absent 20 times more often when the orbital segment was not involved (60% vs. 3%). Except for temporal field loss in eyes with intracranial nerve lesions, no pattern of visual field loss appeared to correlate with the location or length of abnormal optic nerve enhancement.

Fillingim, R. B., D. M. Doleys, et al. (2003). "Spousal responses are differentially associated with clinical variables in women and men with chronic pain." Clinical Journal of Pain **19**(4): 217-24.

OBJECTIVES: Spousal responses have been related to clinical variables in patients with chronic pain. For example, solicitous responses from spouses have been associated with greater levels of pain and disability among patients with chronic pain. However, few investigators have determined whether spousal solicitousness produces different effects in women versus men with chronic pain. The present study examined pain reports, medication use, psychosocial factors, functional measures, and pain tolerance in patients with chronic pain. METHODS: Subjects included 114 female and 213 male chronic pain patients, who described their spouses as either high or low in solicitousness on the Multidimensional Pain Inventory. Measures of pain severity, affective distress, physical function, medication use, and pain tolerance were examined in women and men with high versus low scores on spousal solicitousness. RESULTS: Among males only, high spousal solicitousness was associated with greater numerical ratings of pain and greater self-reported disability compared with patients with low solicitous spouses. Among females only, the high spousal solicitousness patients showed lower pain tolerance, greater pain-related interference, poorer performance on functional tasks (eg, timed walking, lifting, and carrying tasks), and greater use of opioid medications. In both women and men, spousal solicitousness was associated with higher scores on the MPI pain severity scale. DISCUSSION: These results extend previous findings demonstrating a relationship between spousal responses and patients' adjustment to pain; however, the pattern of these effects appears to be moderated by the sex of the patient. Implications for assessment and treatment of chronic pain are discussed.

Fujimura, M., M. Akaike, et al. (2003). "Aggressive antiplatelet therapy before coronary stent implantation in acute coronary syndrome with essential thrombocythemia--a case report." Angiology **54**(4): 485-90.

A 52-year-old man was admitted to the hospital because of unstable angina pectoris. Coronary angiography revealed severe stenosis at a proximal site of the left anterior descending artery. Essential thrombocythemia (ET) was diagnosed on the

basis of findings of marked thrombocytosis ($106 \times 10^4/\mu\text{L}$) and an increased number of immature megakaryocytes in the bone marrow. Because hyperaggregability of platelets was demonstrated by an ex vivo platelet aggregation assay and by elevated plasma levels of beta-thromboglobulin (beta-TG) and platelet factor 4 (PF4), antiplatelet therapy with aspirin and ticlopidine and cyto-reduction therapy with hydroxyurea were started. This combination treatment resulted in a decrease in the platelet count to less than $60 \times 10^4/\mu\text{L}$ and decreases in plasma levels of both beta-TG and PF4 to almost normal values. Percutaneous coronary angioplasty and stenting were then performed successfully without thrombotic complications. These findings suggest that combination therapy with antiplatelet and cyto-reduction agents before catheter intervention is useful for the prevention of thrombotic complications in patients with acute coronary syndrome associated with essential thrombocythemia.

Gaster, A. L., U. Slothuus Skjoldborg, et al. (2003). "Continued improvement of clinical outcome and cost effectiveness following intravascular ultrasound guided PCI: insights from a prospective, randomised study." Heart (British Cardiac Society) **89**(9): 1043-9.

OBJECTIVE: To investigate in a prospective randomised study both long term clinical effects and cost effectiveness of percutaneous coronary interventions (PCI) with or without intravascular ultrasound (IVUS) guidance. METHODS: 108 male patients with stable angina referred for PCI of a significant coronary lesion were randomly assigned to IVUS guided PCI or conventional PCI. Individual accumulated costs of the entire follow up period were calculated and compared in the randomisation groups. Effectiveness of treatment was measured by freedom from major adverse cardiac events. RESULTS: Cost effectiveness of IVUS guided PCI that was noted at six months was maintained and even accentuated at long term follow up (median 2.5 years). The cumulated cost level was found to be lower for the IVUS guided group, with a cumulated cost of &163 672 in the IVUS guided group versus &313 706 in the coronary angiography group ($p = 0.01$). Throughout the study, mean cost per day was lower in the IVUS guided PCI group (&2.7 v & 5.2; $p = 0.01$). In the IVUS group, 78% were free from major adverse cardiac events versus 59% in the coronary angiography group ($p = 0.04$) with an odds ratio of 2.5 in favour of IVUS guidance. CONCLUSION: IVUS guidance results in continued improvement of long term clinical outcome and cost effectiveness. The results of this study suggest that IVUS guidance may be used more liberally in PCI.

Gatty, C. M., M. Turner, et al. (2003). "The effectiveness of back pain and injury prevention programs in the workplace." Work **20**(3): 257-66.

Musculoskeletal disorders in the workplace cause thousands of injuries and cost industry billions of dollars yearly. Work injury prevention programs have been developed and implemented as a means for cost containment. A variety of preventive strategies have been investigated in primary research. The purpose of this review article is to examine the effectiveness of back injury and pain prevention programs in the workplace. Nine studies published between 1995 and 2000 were reviewed and analyzed. Studies used primarily one of three types of preventive strategies: 1) back belts, 2) education and task modification, and 3) education and task modification with workstation redesign. The effectiveness of back belts to prevent back pain and injury remains inconclusive. Positive outcomes were associated with studies reporting high compliance that used job-specific and individualized/small group education and training approaches. Themes that arose following a critical review of primary research studies are discussed. [References: 35]

Graboyes, T. B. and B. Lown (2003). "Cardiology patient page. Nitroglycerin: the "mini" wonder drug." Circulation **108**(11): e78-9.

Greve, K. W., K. J. Bianchini, et al. (2003). "Use of a forced-choice test of tactile discrimination in the evaluation of functional sensory loss: a report of 3 cases." Archives of Physical Medicine & Rehabilitation **84**(8): 1233-6.

The loss of sensation is not an uncommon associated finding after injury to the peripheral nerves and the spinal cord. However, the sensory examination is prone to the influence of nonphysiologic factors, and one cannot use it to determine whether functional sensory loss reflects unconscious or intentional symptom production. This distinction has important implications for differential diagnosis and for decision making in the context of workers' compensation claims and personal injury litigation. We present 3 cases of patients with chronic pain and nondermatomal patterns of loss of fine-touch sensation, whose sensory loss was examined by a sensory forced-choice symptom validity test. Their below-chance scores showed intentionally produced sensory symptoms. The use of this methodology in differential diagnosis is discussed.

Guillou, N., M. Tanguy, et al. (2003). "The effects of small-dose ketamine on morphine consumption in surgical intensive care unit patients after major abdominal surgery." Anesthesia & Analgesia **97**(3): 843-7.

In a randomized, double-blinded study, we evaluated the analgesic effect of ketamine in the management of pain in a surgical intensive care unit after major abdominal surgery. Patients received morphine patient-controlled analgesia with either placebo (Group M) or ketamine (Group K). Morphine was administered with initial loading doses of 2 mg until the visual analog scale (VAS) score was <30 and thereafter with bolus doses of 1 mg and a lockout time of 7 min. Ketamine was administered with an initial bolus of 0.5 mg/kg followed by a perfusion of 2 micro g x kg(-1) x min(-1) during the first 24 h and 1 micro g x kg(-1) x min(-1) during the following 24 h. The 4-h cumulative morphine doses were measured over 48 h. The VAS scores at rest and at mobilization were measured every 4 h during 48 h. A total of 101 patients were enrolled, and 93 were analyzed (41 in Group K and 52 in Group M). VAS scores at rest and at mobilization were similar. The cumulative consumption of morphine was significantly smaller in Group K (P < 0.05). We concluded that small doses of ketamine were a valuable adjunct to opioids in surgical intensive care unit patients after major abdominal surgery.

Gustorff, B., K. H. Hoerauf, et al. (2003). "Comparison of different quantitative sensory testing methods during remifentanil infusion in volunteers." BJA: British Journal of Anaesthesia **91**(2): 203-8.

BACKGROUND: The aim of this study was to compare thermal and current sensory testing stimuli with respect to opioid responsiveness. **METHODS:** Eighteen healthy volunteers were randomized in a placebo-controlled, double-blind crossover study to receive an infusion of remifentanil 0.08 micro g kg(-1) min(-1) or saline for 40 min. Test procedures included determination of pain perception thresholds (PPT) and pain tolerance thresholds (PTT) to heat, cold, and current at 5, 250 and 2000 Hz, at baseline and at the end of the infusion. **RESULTS:** Both current at 5 Hz (PPT 3.69 (SD 2.48) mA vs 2.01 (1.52) mA; PTT 6.42 (2.79) mA vs 3.63 (2.31) mA; P<0.001) and 250 Hz (PPT 4.31 (2.42) mA vs 2.89 (1.57) mA; PTT 7.08 (2.68) mA vs 4.81 (2.42) mA; P<0.001) and heat (PPT 47.4 (2.7) degrees C vs 45.2 (3) degrees C; PTT 51.1 (1.8) degrees C vs 49.7 (1.8) degrees C; P<0.05) detected a significant analgesic effect of remifentanil compared with placebo. No analgesic effect was shown on cold or current at 2000 Hz. The magnitude of responsiveness of current stimuli at 5 Hz and 250 Hz was superior to heat stimuli. **CONCLUSION:** Both current (5 and 250 Hz) and heat sensory testing detected a significant analgesic

effect of a remifentanil infusion compared with saline. There was more response to current testing.

Habib, S., S. A. Morrissey, et al. (2003). "Readiness to adopt a self-management approach to pain: evaluation of the pain stages of change model in a non-pain-clinic sample." Pain **104**(1-2): 283-90.

The Transtheoretical model of stages of behaviour change has stimulated research interest in relation to chronic pain, yet studies using the Pain Stages of Change Questionnaire (PSOCQ; Pain (72) 1997 227) have reported inconsistent findings and have generally utilized pain-clinic samples. The aims of the current study were to assess the general validity of the PSOCQ with a non-pain-clinic sample of patients with chronic pain, and to examine the utility of the stages of change model as applied to this population. The study employed multi-stage, cluster-sampling methodology, with 90 participants recruited from 19 medical and allied health clinics and practices. The findings demonstrated a number of limitations of the PSOCQ in terms of its ability to classify individuals into specific stages of change. The stages of change model requires adaptation in order to be useful for treatment planning in a non-pain-clinic sample of patients with chronic pain.

Hamdan, H. (2003). "Drug selection for dental postoperative pain control in adults." Northwest Dentistry **82**(3): 36-9.

Harris, M. H. (2003). "Pain barriers revisited: ten myths and misconceptions about pain management." South Dakota Journal of Medicine **56**(7): 257-8.

Head, J. (2003). "Painful diabetic neuropathy--providing the best patient service." Diabetes/Metabolism Research Reviews **19**(Suppl 1): S22-8.

Painful diabetic neuropathy is just one of a myriad of secondary conditions that may result from poor glycaemic control. Educating the patient to suspect diabetic complications, understanding why they may occur, what their progression is likely to be and what measures can be taken to avoid them can significantly improve outcomes. Education within the diabetes management framework needs to be consistent, prioritised, tailored to the needs of each patient and ongoing in order to be maximally effective, with tight glycaemic control playing the anchoring central role. The specialist diabetes nurse is in the ideal situation to coordinate this education and to ensure that the patient with diabetes receives the care and support needed to take dual responsibility for their condition. Copyright 2003 John Wiley & Sons, Ltd. [References: 20]

Herxheimer, A. (1993). "Glyceryl trinitrate, flatus and defaecation." British Journal of Clinical Pharmacology **36**(5): 481.

Hollingworth, W., D. T. Gray, et al. (2003). "Rapid magnetic resonance imaging for diagnosing cancer-related low back pain." Journal of General Internal Medicine **18**(4): 303-12.

OBJECTIVES: This study compared the relative efficiency of lumbar x-ray and rapid magnetic resonance (MR) imaging for diagnosing cancer-related low back pain (LBP) in primary care patients. **DESIGN:** We developed a decision model with Markov state transitions to calculate the cost per case detected and cost per quality-adjusted life year (QALY) of rapid MR imaging. Model parameters were estimated from the medical literature. The costs of x-ray and rapid MR were calculated in an activity-based costing study. **SETTING AND PATIENTS:** A hypothetical cohort of primary care patients with LBP referred for imaging to exclude cancer as the cause of their pain. **MAIN RESULTS:** The rapid MR strategy was more expensive due to higher initial imaging costs and larger numbers of patients requiring conventional MR and biopsy.

The overall sensitivity of the rapid MR strategy was higher than that of the x-ray strategy (62% vs 55%). However, because of low pre-imaging prevalence of cancer-related LBP, this generates <1 extra case per 1,000 patients imaged. Therefore, the incremental cost per case detected using rapid MR was high (\$213,927). The rapid MR strategy resulted in a small increase in quality-adjusted survival (0.00043 QALYs). The estimated incremental cost per QALY for the rapid MR strategy was \$296,176. CONCLUSIONS: There is currently not enough evidence to support the routine use of rapid MR to detect cancer as a cause of LBP in primary care patients.

Huang, J. J. and C. Lauryssen (2003). "Management of postoperative pain after T6 corpectomy: use of epidural bupivacaine and sufentanil--a case report." AANA Journal **71**(3): 212-4.

The objective of this case report is to discuss the successful postoperative analgesic management in a patient who had disseminated rectal cancer pain and failed to obtain pain relief despite high-dose intravenous hydromorphone. A 45-year-old male had metastatic rectal cancer involving multiple vertebrae. After a T6 corpectomy, the patient failed to obtain effective pain relief with massive doses of parenteral opioids. The epidural catheter was placed under fluoroscopy. The patient subsequently failed to obtain relief with epidural administration of bupivacaine and hydromorphone. Epidural sufentanil was used to obtain adequate pain control. Postoperative epidural analgesia is a technique worthy of consideration for patients with extreme opioid dependency for corpectomy. Epidural sufentanil can successfully be administered for postoperative pain control for patients receiving a large dose of opioids for cancer pain.

Inui, K., T. D. Tran, et al. (2003). "A comparative magnetoencephalographic study of cortical activations evoked by noxious and innocuous somatosensory stimulations." Neuroscience **120**(1): 235-48.

We recorded somatosensory-evoked magnetic fields and potentials produced by painful intra-epidermal stimulation (ES) and non-painful transcutaneous electrical stimulation (TS) applied to the left hand in 12 healthy volunteers to compare cortical responses to noxious and innocuous somatosensory stimulations. Our results revealed that cortical processing following noxious and innocuous stimulations was strikingly similar except that the former was delayed approximately 60 ms relative to the latter, which was well explained by a difference in peripheral conduction velocity mediating noxious (A delta fiber) and innocuous (A beta fiber) inputs. The first cortical activity evoked by both ES and TS was in the primary somatosensory cortex (SI) in the hemisphere contralateral to the stimulated side. The following activities were in the bilateral secondary somatosensory cortex (SII), insular cortex, cingulate cortex, anterior medial temporal area and ipsilateral SI. The source locations did not differ between the two stimulus modalities except that the dipole for insular activity following ES was located more anterior to that following TS. Both ES and TS evoked vertex potentials consisting of a negativity followed by a positivity at a latency of 202 and 304 ms, and 134 and 243 ms, respectively. The time course of the vertex potential corresponded to that of the activity of the medial temporal area. Our results suggested that cortical processing was similar between noxious and innocuous stimulation in SI and SII, but different in insular cortex. Our data also implied that activities in the amygdala/hippocampal formation represented common effects of noxious and tactile stimulations.

Isaac, A., N. Baker, et al. (2003). "A young man with sore throat, acute abdomen and respiratory failure." Journal of Postgraduate Medicine **49**(2): 166-8.

Jain, A., V. Wadehra, et al. (2003). "Management of stable angina." Postgraduate Medical Journal **79**(932): 332-6.

Ischaemic heart disease may present as a wide variety of clinical entities including unstable or stable angina pectoris, acute myocardial infarction, and occasionally heart failure. Chronic stable angina is a common condition and results in a considerable burden for both the individual and society. The goals in management are (i) treatment of other conditions that may worsen angina; (ii) modification of risk factors and treatment with medications for coronary artery disease to improve outcome; and (iii) effective relief of anginal symptoms. There are limitations to the methods available to risk-stratify patients, and the optimal treatment strategy remains unclear. The benefits of lifestyle modification cannot be over-emphasised, and appropriate attention to modifiable risk factors is paramount. The mortality benefit of lipid lowering treatment and antiplatelet therapy is well proved. However the evidence base for anti-ischaemic therapy is less rigorous, being based mainly on extrapolations from studies of acute coronary syndromes. Angioplasty has been shown to be more effective in relief of symptoms than medical therapy alone, but provides no mortality benefit. Coronary artery bypass surgery, however, has been shown to reduce mortality in patients with severe proximal coronary disease when compared with medical management alone. [References: 68]

Jaitly, V. (2003). "Efficacy of intravenous magnesium in neuropathic pain.[comment]." BJA: British Journal of Anaesthesia **91**(2): 302; author reply 302.

Kapur, N., I. R. Kamel, et al. (2003). "Oral and craniofacial pain: diagnosis, pathophysiology, and treatment." International Anesthesiology Clinics **41**(3): 115-50.

Karst, M., T. Kegel, et al. (2003). "Effect of celecoxib and dexamethasone on postoperative pain after lumbar disc surgery." Neurosurgery **53**(2): 331-6; discussion 336-7.

OBJECTIVE: This study was designed to assess the efficacy of perioperative administration of celecoxib (Celebrex; Pharmacia GmbH, Erlangen, Germany) in reducing pain and opioid requirements after single-level lumbar microdiscectomy. **METHODS:** We studied 34 patients (mean age, 44.26 yr; standard deviation [SD], 13.09 yr) allocated randomly to receive celecoxib 200 mg twice a day for 72 hours starting on the evening before surgery or placebo capsules in a double-blind study. Fourteen patients received 20 to 80 mg dexamethasone intravenously during surgery (mean, 40 mg; SD, 19.22 mg) because of visible signs of compression of the affected nerve root. After lumbar disc surgery, patients were monitored for visual analog scores for pain at rest and on movement, patient-controlled analgesia (PCA) piritramide requirements, and von Frey thresholds in the wound area. **RESULTS:** Pain scores decreased and wound von Frey thresholds increased continuously until discharge, with no intergroup differences. Mean 24-hour PCA piritramide requirements were 22.63 mg (SD, 23.72 mg) and 26.14 mg (SD, 22.57 mg) in the celecoxib and placebo groups, respectively (P = not significant). However, patients with intraoperative dexamethasone (n = 14) required only 10.29 mg (SD, 8.55 mg) 24-hour PCA piritramide, in contrast to the 34.25 mg (SD, 24.69 mg) needed in those who did not receive intraoperative dexamethasone (P = 0.001). In addition, 24 hours after the operation, pain scores on movement were significantly lower in the dexamethasone subgroup (P = 0.003). **CONCLUSION:** Celecoxib has no effect on postoperative pain scores and PCA piritramide requirements. The intraoperative use of 20 to 80 mg dexamethasone is able to significantly decrease postoperative piritramide consumption and pain scores on the first day after surgery.

Keiser, K. and K. M. Hargreaves (2003). "Strategies for managing the endodontic pain patient." Journal of the Tennessee Dental Association **83**(2): 24-8.

Kernich, C. A. (2003). "Treatment of chronic pain." Neurologist **9**(4): 220-1.

Kirkham, S. R. (2003). "Re: The fentanyl transdermal patch in the dying phase.[comment]." Journal of Pain & Symptom Management **26**(1): 589-90; author reply 590.

Kline, K. M., D. G. Carroll, et al. (2003). "Painful diabetic peripheral neuropathy relieved with use of oral topiramate." Southern Medical Journal **96**(6): 602-5.

Diabetic peripheral neuropathy affects 5 to 50% of people with diabetes in the United States. It is a progressive disorder that results in a gradual decrease in peripheral sensation and eventually complete loss of sensation. Patients with diabetic peripheral neuropathy are challenging to treat because of intolerable adverse medication effects and the development of tolerance to medical treatment. We present the case of a patient with peripheral neuropathy that was unresponsive to usual therapies. She experienced significant relief with the administration of topiramate. Topiramate is an anticonvulsant that is gaining recognition in the treatment of patients with neuropathic pain syndromes.

Kober, A., M. Dobrovits, et al. (2003). "Local active warming: an effective treatment for pain, anxiety and nausea caused by renal colic." Journal of Urology **170**(3): 741-4.

PURPOSE: Based on previous studies showing that warming decreases trauma pain in emergency care we hypothesized that local active warming of the abdomen and lower back region could decrease pain in acute renal colic cases during emergency transport. **MATERIALS AND METHODS:** After obtaining informed consent 100 patients were divided into 2 groups, including those who received active warming of the abdomen and lower back region (42C) and those who received no warming. Pain, nausea and anxiety were rated by the patients using visual analog scales. Statistical evaluation was performed using the t test with $p < 0.05$ considered significant. **RESULTS:** In group 1 a significant pain decrease was recorded in all cases using a visual analog score (VAS) (82.7 +/- 9.5 to 36.3 +/- 16.0 mm VAS, $p < 0.01$). In group 2 patient pain scores remained comparable (81.8 +/- 13.0 to 80.6 +/- 12.3 mm VAS). In group 1 anxiety significantly decreased (79.0 +/- 8.9 and 30.7 +/- 14.1 mm VAS before and after treatment, respectively, $p < 0.01$). In group 2 a nonsignificant change in score was noted (79.7 +/- 20.5 to 75.2 +/- 19.7 mm VAS). In group 1 a significant decrease in nausea was recorded in all cases (85.7 +/- 11.2 to 40.6 +/- 23.0 mm VAS, $p < 0.01$). In group 2 patient nausea scores remained comparable (79.2 +/- 22.0 to 80.3 +/- 22.4 mm VAS, respectively). **CONCLUSIONS:** Local active warming is an effective and easy to learn pain treatment for patients with acute renal colic in emergency care.

Kwan, O. and J. Friel (2003). "Management of chronic pain in whiplash injury.[comment]." Journal of Bone & Joint Surgery - British Volume **85**(6): 931; author reply 931-2.

Laberge, P. Y., R. Sabbah, et al. (2003). "Assessment and comparison of intraoperative and postoperative pain associated with NovaSure and ThermaChoice endometrial ablation systems." Journal of the American Association of Gynecologic Laparoscopists **10**(2): 223-32.

STUDY OBJECTIVE: To assess and compare intraoperative and postoperative pain associated with NovaSure impedance-controlled endometrial ablation system and ThermaChoice system. **DESIGN:** Prospective, international, multicenter, double-arm study (Canadian Task Force classification II-1). **Setting:** Academic medical centers and private offices. **PATIENTS:** Sixty-seven premenopausal women with menorrhagia. **INTERVENTION:** Endometrial ablation with either the NovaSure (37

women) or ThermaChoice (30) system. NovaSure-treated patients received no endometrial pretreatment; those treated with ThermaChoice received the recommended 3-minute suction dilatation and curettage. MEASUREMENTS AND MAIN RESULTS: Standard pain measurement instruments (visual analog scale, numeric rating scale) were used to assess intraoperative and postoperative pain. Serum levels of prostaglandin-F(2alpha) were measured before and 5, 30, and 60 minutes after the procedure. Patients treated with the NovaSure system reported statistically significantly lower intraoperative and postoperative pain than those treated with the ThermaChoice system ($p < 0.0001$). Procedure time was statistically significantly shorter with the NovaSure system ($p < 0.0001$). Prostaglandin-F(2alpha) values did not differ statistically between groups. CONCLUSION: The NovaSure system is associated with statistically significantly lower intraoperative and postoperative pain than ThermaChoice system, and endometrial ablation with NovaSure could become an office-based procedure.

Lawlor, D. A., J. Adamson, et al. (2003). "Performance of the WHO Rose angina questionnaire in post-menopausal women: are all of the questions necessary?" Journal of Epidemiology & Community Health **57**(7): 538-41.

OBJECTIVE: To assess the performance of a shortened version of the Rose angina questionnaire focusing on exertional chest pain. METHODS: Cross sectional analysis of 3987 women aged 60 to 79 years from 23 British towns. The performances of definite Rose angina (using data from the full Rose angina questionnaire) and exertional chest pain (using data from a subset of three questions from the Rose angina questionnaire) were assessed against a medical record of angina. RESULTS: The sensitivity (the proportion with a medical record of angina who were identified as having angina by the questionnaire) was 29.9% (95% confidence intervals 25.7% to 34.4%) comparing definite Rose angina to any medical record of angina since 1978 and 50.7% (45.9% to 55.5%) comparing exertional chest pain to any medical record diagnosis of angina. The positive predictive values of both questionnaires were similar. When the two questionnaires were compared with a gold standard of a primary care consultation for angina symptoms within the past five years the sensitivity of definite Rose angina was 33.0% (26.9% to 39.6%) and that of exertional chest pain was 51.8% (45.1% to 58.5%). Although the sensitivity of both versions of the questionnaire was greater in those aged 60-69 years compared with those aged 70-79 years, it remained higher in the exertional chest pain version of the questionnaire than for definite Rose angina based on the full version of the questionnaire in both age groups. Performance of either version of the questionnaire was not affected by occupational social class. CONCLUSIONS: With respect to identifying women with a medical diagnosis of angina or those presenting to primary care with anginal symptoms, these results suggest that a shortened version of the Rose angina questionnaire focusing on exertional chest pain performs better than the full version. Other studies suggest that exertional chest pain is the crucial element of the Rose angina questionnaire with respect to predicting future coronary events. It is concluded that using a shortened version of the Rose angina questionnaire is adequate in epidemiological studies.

Lee, D. C. and J. R. Ryan (2003). "Magnesium-aluminum hydroxide suspension for the treatment of dermal capsaicin exposures." Academic Emergency Medicine **10**(6): 688-90.

OBJECTIVES: To determine whether magnesium-aluminum-hydroxide-simethicone suspension (MgAl) is an effective treatment for dermal capsaicin exposures. METHODS: The authors performed a double-blind, randomized, controlled, pilot study comparing the effect of MgAl with that of saline in the treatment of dermal capsaicin exposures. Ten volunteers were sprayed with a commercial defensive spray containing 10% capsaicin on the flexor surface of both

forearms. A dressing embedded with MgAl (Maalox) suspension was randomly applied to one arm and a saline-embedded dressing was applied to the other arm. Pain was assessed on a 10-cm visual analog scale at 0, 10, 20, 30, 60, 90, and 120 minutes. RESULTS: Mean pain scores were significantly lower in the MgAl group as compared with the saline (S) group at 10, 20, and 30 minutes. Differences in pain scores were not statistically significant at times 60, 90, and 120 minutes. CONCLUSIONS: During the initial 30 minutes of treatment, there was a statistically significant decrease in pain scores with MgAl as compared with saline treatments. Although the difference in means may have questionable clinical significance, MgAl is cheap and readily available, and has minimal side effects. Thus, MgAl may be an appropriate treatment for dermal capsaicin exposure.

Leibing, E., M. Pflingsten, et al. (2003). "Comment on: Molsberger AF, Mau J, Pawelec DB, Winkler J. Does acupuncture improve the orthopedic management of chronic low back pain? *Pain* 2002; 99:579-87.[comment]." *Pain* **104**(1-2): 425-6; author reply 426-7.

Lince, E. (2003). "Narcotics for diabetic neuropathy.[comment]." *Advance for Nurse Practitioners* **11**(7): 18.

Lopez, S., T. Gros, et al. (2003). "Fascia iliaca compartment block for femoral bone fractures in prehospital care." *Regional Anesthesia & Pain Medicine* **28**(3): 203-7.
BACKGROUND AND OBJECTIVES: The fascia iliaca compartment block provides a faster and more consistent simultaneous blockade of the lateral cutaneous and femoral nerves than the "3 in 1" block. We studied the effectiveness of this technique for analgesia after a femoral bone fracture in pre-hospital care. METHODS: Patients with an isolated femoral shaft fracture were included. A fascia iliaca compartment block was performed on all of them. Twenty milliliters of lidocaine 1.5 % with epinephrine were injected under the fascia iliaca. The intensity of pain was measured using a simplified verbal scale (SVS) from 0 (no pain) to 4 (extreme pain). The SVS was noted before the block was performed, 10 minutes later, and then on admission to the trauma care center. Sensory blockade was evaluated using cold perception in the lateral, medial, and internal part of the thigh 10 minutes after block performance and on arrival at the trauma care center. RESULTS: Twenty-seven patients were enrolled in this study. The SVS was 3 (3-4) before the block, 1 (0-2) 10 minutes after the block, and 0 (0-1) when arriving at the trauma care center (P <.05). The SVS was lower when the internal part of the thigh was blocked. CONCLUSION: The fascia iliaca compartment block is a simple, inexpensive, and effective method of prehospital analgesia for femoral shaft fracture. A sensory block of the internal part of the thigh is an early predictive sign of optimal pain relief.

Lussier, D. and R. A. Cruciani (2003). "Choreiform movements after a single dose of methadone." *Journal of Pain & Symptom Management* **26**(2): 688-91.

Manfredi, P. L., B. Breuer, et al. (2003). "Opioid treatment for agitation in patients with advanced dementia." *International Journal of Geriatric Psychiatry* **18**(8): 700-5.

BACKGROUND: Some patients with advanced dementia cannot convey the experience of pain verbally and may react to pain with aggressive and agitated behaviors. We hypothesized that unrecognized pain could contribute to agitation and that low dose opioid therapy might reduce agitation by reducing pain. We therefore attempted to determine the effect of opioids on agitation in demented patients. METHODS: We administered placebo for 4 weeks and a long-acting opioid for another 4 weeks to nursing home patients with advanced dementia and severe agitation despite treatment with psychotropic drugs. Patients and study nurses did not know if the medication administered was placebo or opioid. We measured the

Cohen-Mansfield Agitation Inventory (CMAI) score at baseline and every two weeks. RESULTS: Among 47 patients who entered the study, 25 completed the two phases. The median age for the 25 patients was 85.5 years. Analyses of the data of these 25 patients and of the patients <85 years-old showed no significant differences in agitation level between the placebo and opioid phases. However, among the 13 patients who completed the study and were > or =85 years old, the agitation level at the end of the opioid phase was significantly lower than at the end of the placebo phase (mean change in CMAI score: -6.4; 95% confidence interval (CI): -10.96, -1.8). The decrease in agitation in the patients > or =85 years old persisted after adjusting for sedation. The results remained unchanged when we expanded the analyses to include four > or =85 patients who dropped out of the study after the second week of the opioid phase. CONCLUSION: Low dose, long-acting opioids can lessen agitation that is difficult to control in very old (> or =85) patients with advanced dementia. Copyright 2003 John Wiley & Sons, Ltd.

Manfredi, P. L., K. M. Foley, et al. (2003). "Parenteral methadone: an essential medication for the treatment of pain." Journal of Pain & Symptom Management **26**(2): 687-8.

Marchal, J. M., A. D. Delgado-Martinez, et al. (2003). "Does the type of arthroscopic surgery modify the analgesic effect of intraarticular morphine and bupivacaine? A preliminary study." Clinical Journal of Pain **19**(4): 240-6.

OBJECTIVE: To analyze the different analgesic response to intraarticular morphine and bupivacaine in different types of arthroscopic surgery. DESIGN: Prospective, randomized and double-blinded. Fifty-three consecutive patients undergoing an arthroscopic knee procedure under general anesthesia. They were studied separately in 2 groups (types of surgery): (1) "Low inflammatory surgery": diagnostic arthroscopy, partial meniscectomy; and (2) "High inflammatory surgery": ACL (anterior cruciate ligament) reconstruction, lateral release, patellar shaving and plicae removal. At the end of the procedure, patients were randomized to receive 25 mL of bupivacaine 0.25% with epinephrine (1/200,000), 5 mg of morphine, or saline (placebo) into the knee joint. Postoperative pain was determined through the visual analog scale (VAS). Supplemental analgesia (ketorolac) was administered via intravenous patient-controlled analgesia (i.v. PCA). Pain and requirements of analgesia were compared between bupivacaine, morphine, and placebo in each group of surgery. RESULTS: When considering only the "Low inflammatory" group of patients, those who received bupivacaine showed a lower postoperative pain score at 4 and 8 hours ($P < 0.05$). When considering only the "High inflammatory" group, the patients who received morphine showed a lower postoperative pain score at 24 hours and less requirements of ketorolac ($P < 0.05$). CONCLUSIONS: The analgesic effect of morphine and bupivacaine is different depending on the type of arthroscopic surgery. Intraarticular bupivacaine is effective in surgeries with a low inflammatory response. For surgeries with a higher inflammatory response, morphine has a better analgesic effect. Postoperative intraarticular analgesic therapy should be indicated according to the performed arthroscopic procedure.

Martinez, M. J., M. Roque, et al. (2003). "Calcitonin for metastatic bone pain." Cochrane Database of Systematic Reviews(3): CD003223.

BACKGROUND: Pain is the most frequent symptom experienced by cancer patients, its intensity dependent on the site of the tumour. Tumours that compromise bone or nervous structures due to the bone destruction process are the most painful. There are several treatments to deal with pain (and other symptoms) caused by bone metastasis. The hormone, calcitonin, has the potential to relieve pain, and also retain bone density, thus reducing the risk of fractures. OBJECTIVES: To assess the effectiveness of calcitonin in controlling metastatic bone pain and

reducing bone complications (hypercalcemia, fractures and nervous compression) in patients with bone metastases. SEARCH STRATEGY: Electronic searches were performed in MEDLINE (1966-2001), EMBASE (1974-2001), the Cochrane Central Register of Controlled Trials (Issue 2, 2001), specialised registers of the Cochrane Cancer Network and of the Cochrane Pain, Palliative and Supportive Care Group. Registers of clinical trials in progress were also searched. SELECTION CRITERIA: Studies were included if they were randomised, double-blind clinical trials of patients with metastatic bone pain, treated with calcitonin, where the major outcome measure was pain, assessed at four weeks or longer. DATA COLLECTION AND ANALYSIS: Study selection and data extraction were performed by two independent reviewers. Only two studies (90 patients) were eligible for inclusion in the review and therefore meta-analysis of the data was not possible. Intention-to-treat analysis was performed by imputing all missing values as adverse outcomes. MAIN RESULTS: Of the two small studies included in the review, one study showed a non-significant effect of calcitonin in the number of patients with total pain reduction (RR 2.50; CI 95%, 0.55 to 11.41). The second study provided no evidence that calcitonin reduced analgesia consumption (RR 1.05; CI 95%, 0.90 to 1.21) in patients with painful bone metastases. There was no evidence that calcitonin was effective in controlling complications due to bone metastases; for improving quality of life; or patients' survival. Although not statistically significant, a greater number of adverse effects were observed in the groups given calcitonin in the two included studies (RR 3.35, CI 95%, 0.72 to 15.66). REVIEWER'S CONCLUSIONS: The limited evidence currently available for systematic review does not support the use of calcitonin to control pain from bone metastases. Until new studies provide additional information on this treatment, other therapeutic approaches should be considered. [References: 26]

McClellan, K. and L. J. Scott (2003). "Tramadol/paracetamol." *Drugs* **63**(11): 1079-86; discussion 1087-8.

The orally administered fixed combination tablet of tramadol (centrally-acting opiate) plus paracetamol (acetaminophen; nonopiate, nonsalicylate analgesic) [37.5/325 mg] provides effective analgesia in patients with moderate to severe acute pain and those with chronic painful conditions characterised by intermittent exacerbations of pain. Two tramadol/paracetamol 37.5/325 mg tablets provided greater relief of dental pain over an 8-hour period than either agent alone, with a faster onset of action than tramadol alone and a longer duration of action than either agent as monotherapy. In patients with postoperative dental pain, two tramadol/paracetamol tablets (37.5/325 mg) provided similar analgesia to hydrocodone/paracetamol 10/650 mg over an 8-hour period. The addition of one or two tramadol/paracetamol 37.5/32 5mg tablets (up to four times daily) for 5 days to existing NSAID or cyclo-oxygenase-2 inhibitor analgesic therapy provided effective pain relief in patients with osteoarthritis flare pain. Tramadol/paracetamol 37.5/325 mg provided similar efficacy to that of codeine/paracetamol 30/300 mg in patients with chronic back pain in a 4-week, randomised, double-blind trial (a maximum of 10 tablets or capsules per day of the active drug). [References: 27]

McGregor, N. R., M. Zerbes, et al. (2003). "Coagulase-negative staphylococcal membrane-damaging toxins, pain intensity, and metabolic changes in temporomandibular disorder patients with chronic muscle pain." *Journal of Orofacial Pain* **17**(2): 125-32.

AIMS: To investigate the association between toxin-producing staphylococci, symptom expression, and changes in urinary excretion of metabolites in temporomandibular disorder (TMD) patients and age- and sex-matched control subjects. METHODS: Twenty-nine patients defined by the research diagnostic criteria/TMD as having Type 1a muscle pain (TMD1A), and 34 age- and sex-matched control subjects were assessed for the carriage of staphylococcal species,

staphylococcal toxin production, expression of symptoms, and changes in urinary excretion of amino and organic acids. RESULTS: TMD1A patients had an increased incidence of carriage of toxin-producing coagulase-negative staphylococcus (MDT-CoNS, $P < .004$), which produced increased levels of delta-like membrane-damaging toxins. The TMD1A patients also had a reduction in the incidence of carriage of *Staphylococcus aureus* ($P < .02$). Increased incidence of MDT-CoNS was positively associated with increased pain intensity as assessed by a visual analog scale ($P < .001$). Odds ratio analysis revealed a 9.2-fold increase in MDT-CoNS recovery from the nose of TMD1A patients compared with the control subjects (odds ratio = 9.2, $> 95\%$ confidence limits: 2.3 to 37.5, $P < .001$). Increases in the carriage incidence of MDT-CoNS were also associated with increases in the urinary tyrosine:leucine ratio ($P < .004$), which represents a change in the balance of proteolysis and protein synthesis. The toxin production by these CoNS species was also associated with an increased urinary excretion of glutamic acid ($P < .03$). CONCLUSION: These data suggest that an increased colonization of MDT-CoNS on skin and mucosal membranes was associated with changed proteolysis, increased pain intensity, and an increase in excitatory amino acids consistent with events associated with the development of chronic orofacial muscle pain in TMD patients.

McGregor, N. R., M. Zerbes, et al. (2003). "Pain intensity, illness duration, and protein catabolism in temporomandibular disorder patients with chronic muscle pain." *Journal of Orofacial Pain* **17**(2): 112-24.

AIMS: To investigate whether the duration of chronic pain in temporomandibular disorder (TMD) patients is associated with a net depletion of amino acids, and a distinct process from pain intensity. METHODS: Twenty-nine patients defined by the research diagnostic criteria/TMD as having Type 1a muscle pain (TMD1A group), and 34 age- and sex-matched control subjects, were assessed for variation in urinary organic and amino acid excretion by gas chromatography-mass spectrometry. RESULTS: The TMD1A patients' mean pain intensity, assessed on a visual analog scale (VAS), was 5.4 (95% confidence limits: 4.5 to 6.3), TMD1A illness duration was 5.0 +/- 1.2 (SD) years, number of body areas with pain/subject was 6.3 +/- 2.4 (range 0 to 10), and symptom prevalence from the Symptom Check List-90-Revised (SCL-90-R) was 25.5 +/- 11.3 symptoms/subject, which was higher than the controls (5.2 +/- 5.0 symptoms/subject, $P < .001$). TMD1A patient illness duration was positively correlated with symptom prevalence and body pain distribution, and all were independent of pain intensity. The TMD1A patients had: (1) and increased tyrosine:leucine ratio; and (2) reduced leucine concentrations (both $P < .001$), which suggests deregulated catabolism. Pain intensity was associated with: (1) changes in the multivariate urinary metabolite excretion patterns ($P < .001$); (2) reduced leucine concentrations ($P < .001$); and (3) increases in total urinary metabolites ($P < .04$), and in 2 unidentified molecules, UM28 ($P < .001$) and CFSUM1 ($P < .002$). TMD1A illness duration was associated with lower (1) urinary metabolite concentrations and (2) succinic acid and combined glutamine + glutamic acid levels, suggesting a progressive depletion of metabolite reserves. CONCLUSION: In TMD1A patients, total amino acid excretion was positively correlated with pain intensity and negatively correlated with illness duration, which indicated that illness duration was associated with a different set of metabolic anomalies compared with those identified for pain intensity.

Meknas, K., A. Christensen, et al. (2003). "The internal obturator muscle may cause sciatic pain." *Pain* **104**(1-2): 375-80.

Six patients suspected to have piriformis syndrome were operated in the hip region in an attempt to relieve pressure on the sciatic nerve. The piriformis muscle and tendon as well as their relationship to the sciatic nerve were found to be normal. However, the internal obturator muscle was found to be very tense, slightly

hyperaemic and pressing the sciatic nerve. During Lasegue's testing on the operating table the internal obturator and not the piriformis muscle impinged on the nerve at an early stage in the hip flexion movement. A sectioning of the tendon to the internal obturator muscle near its insertion at the trochanter was performed. Median pain score was found to be reduced from the preoperative value (8.5) to that at 6 weeks (3.5) ($P < 0.05$) and 3 (3.5) ($P < 0.05$) and 6 months (5.5) (N.S.) postoperatively. No significant reduction of pain was found in a control group of six patients followed during the same period. Three patients who needed opioids preoperatively managed without such drugs 6 months after the operation. Two patients in the operated group were at work 50 and 100% after having been out of work for 3 and 10 years, respectively.

Mercadante, S., M. Bianchi, et al. (2003). "Opioid plasma concentration during switching from morphine to methadone: preliminary data." Supportive Care in Cancer **11**(5): 326-31.

Opioid switching is often used to improve the opioid response in cancer patients experiencing poor analgesia or adverse effects. However, no data are available on plasmatic changes of opioids and their metabolites during these phases, and whether there exists a relationship with the clinical events. In a prospective study of 10 consecutive cancer patients on oral morphine but with uncontrolled pain (greater >4 on a numerical scale of 0 to 10) and/or moderate to severe opioid adverse effects (on a level of 2 and 3 of a verbal scale) and not responsive to adjuvant medications, switching to oral methadone was performed using a fixed ratio of 5:1, leaving extra-doses of 1/5 of the daily dose of methadone calculated as needed. Blood samples were obtained at the same hour for four days, before the switching, and then on day 1, 2, and 3. The intensity of pain and the adverse effects were assessed daily to calculate the switching score before and after switching. Completed blood samples were obtained in 9 patients. One patient was separately considered, because of his renal impairment. Significant improvements in pain intensity as well as adverse effects within an average period of 1-2 days were observed. Morphine, morphine-6-glucuronide, and morphine-3-glucuronide were progressively cleared from plasma to almost disappear within three days. Methadone rapidly achieved a stable concentration in 1-2 days. The doses of methadone were changed, but not significantly, and tended to decrease in the following days, according to the clinical situation. The results of this study confirm the need to stop rapidly morphine, and to use a priming dose of methadone, rather than using progressive decrements and increments of morphine and methadone, respectively, during opioid switching. This method allows for a rapid clearance of morphine and its metabolites are rapidly cleared, except in patients with renal failure. Opioid plasma changes substantially overlap the clinical changes observed in these patients, in terms of benefit between analgesia and adverse effects.

Mercadante, S., P. Ferrera, et al. (2003). "Hyperalgesia: an emerging iatrogenic syndrome." Journal of Pain & Symptom Management **26**(2): 769-75.

Clinical reports suggest that opioids, intended to abolish pain, can unexpectedly produce hyperalgesia. This paradoxical effect may be mechanistically related to tolerance induced by increasing doses of opioids. Two case reports illustrate a syndrome characterized by increasing pain pursued by escalating opioid doses, which results in a worsening of the clinical picture. Several experimental data may help explain the course of this challenging clinical condition. In escalating opioid doses rapidly, a risk of opioid-induced hyperalgesia should be recognized, as higher doses of opioids may stimulate rather than inhibit the central nervous system by different mechanisms. Alternative procedures should be taken into consideration to break this cycle, should it occur. More data are needed to detect this condition, as

currently no diagnostic information on specific markers, clinical or biochemical, exists.

Mercadante, S., P. Villari, et al. (2003). "Naloxone in treating central adverse effects during opioid titration for cancer pain." Journal of Pain & Symptom Management **26**(2): 691-3.

Michalis, L. K., C. S. Katsouras, et al. (2003). "Enoxaparin versus tinzaparin in non-ST-segment elevation acute coronary syndromes: the EVET trial.[comment]." American Heart Journal **146**(2): 304-10.

BACKGROUND: Low-molecular weight heparins have different pharmacokinetic and pharmacodynamic characteristics and may vary in efficacy. We compared the efficacy of enoxaparin with that of tinzaparin in the management of non-ST-segment elevation acute coronary syndromes (NSTACS). METHODS: A total of 438 patients with NSTACS were randomized to receive subcutaneous treatment with enoxaparin, 100 IU/kg twice daily (equivalent to 1 mg/kg twice daily; n = 220), or tinzaparin, 175 IU/kg once daily, (n = 218) for as long as 7 days. The primary composite end point was recurrent angina, myocardial infarction (or reinfarction), or death at day 7. Secondary end points were the primary end point at day 30 and the occurrence of individual events at days 7 and 30. RESULTS: The incidence of the primary end point was 12.3% in the enoxaparin group and 21.1% in the tinzaparin group (P =.015). At day 7, the rate of recurrent angina was lower with enoxaparin than with tinzaparin (11.8% vs 19.3%). At day 30, the incidences of the composite end point, recurrent angina, and myocardial infarction were also lower with enoxaparin, 17.7% vs 28.0% (P =.012), 17.3% vs 26.1% and 0.5% vs 2.8%, respectively. The rate of revascularization was lower in the enoxaparin group, 8.6% vs 17.9% (P =.010) at day 7 and 16.4% vs 26.1% (P =.019) at day 30. Rates of bleeding complications were similar in the 2 treatment groups. CONCLUSIONS: This study indicates a benefit of enoxaparin (100 IU/kg twice daily) as compared with tinzaparin (175 IU/kg once daily) in the treatment of patients with NSTACS, which is sustained for at least 30 days.

Michel, M. Z. and M. K. Sanders (2003). "Effectiveness of acute postoperative pain management.[comment]." BJA: British Journal of Anaesthesia **91**(3): 448-9; author reply 449.

Monck, N. (2003). "NO-naproxen (AstraZeneca)." Idrugs **6**(6): 593-9.

NO-naproxen, consisting of the NSAID naproxen linked to a nitric oxide (NO) moiety, is under development by AstraZeneca plc, under license from NicOx SA, for the potential treatment of acute/chronic pain. [References: 48]

Nahit, E. S., S. Taylor, et al. (2003). "Predicting the onset of forearm pain: a prospective study across 12 occupational groups." Arthritis & Rheumatism **49**(4): 519-25.

OBJECTIVE: To determine, among workers free of forearm pain, the role of mechanical and psychosocial factors in predicting future onset. METHODS: A prospective cohort study was conducted among 782 newly employed workers from 12 occupational groups. At baseline, a cohort of 782 workers free of forearm pain was identified and measurement was made about physical and psychosocial aspects of their job and working environment. Subjects were recontacted after 1 year to determine new onsets of forearm pain. A sample of those reporting new onset forearm pain underwent a structured examination of the upper limb. RESULTS: One year after baseline, 666 (85%) subjects were followed up. The overall prevalence of new onset forearm pain was 8.3% (n = 55). The strongest mechanical risk factor was frequent repetitive movements of the arm or wrist (odds ratio [OR] 2.9, 95%

confidence interval [95% CI] 1.6-5.2). The strongest psychosocial risk factors were work considered monotonous at least half of the time (OR 3.0, 95% CI 1.6-5.7) or work with little autonomy (OR 2.6, 95% CI 1.1-6.1). Three specific independent risk factors (monotonous work, repetitive wrist movement, working with hands above shoulder level) could distinguish groups of subjects at substantially different risks of onset. CONCLUSIONS: Along with repetitive movements of the arms and wrists, mechanical postural factors and psychosocial factors also are important risk factors for onset of forearm pain. Our study emphasizes the multifactorial nature of risks for onset of forearm pain, and provides leads as to possible mechanisms for prevention.

Nash, J. M., G. L. Lipchik, et al. (2003). "American Headache Society members' assessment of headache diagnostic criteria." *Headache* **43**(1): 2-13.

OBJECTIVE: We assessed the views of physicians interested in headache as to the diagnosis of the most commonly occurring and currently controversial headaches. BACKGROUND: The International Headache Society (IHS) classification system has received wide professional endorsement and considerable empirical support, but in the United States, their adoption by clinicians may be proceeding more slowly. Questions remain, including what diagnostic criteria for migraine and tension-type headache clinicians may continue to favor over those outlined by the IHS, to what extent is the "transformed migraine" diagnosis used in clinical practice, and how is analgesic rebound headache diagnosed with regard to the various quantitative measures of analgesic use. METHODS: Members of the American Headache Society rated the importance of IHS and non-IHS diagnostic criteria for migraine and tension-type headache and for analgesic rebound headache. Respondents also described their use of the proposed transformed migraine diagnosis. RESULTS: Two-thirds (67.3%) of the respondents reported use of the IHS criteria or the IHS criteria in conjunction with clinical judgment. For migraine and tension-type headache, IHS criteria were rated with high importance, but some respondents reported using additional non-IHS diagnostic criteria and de-emphasizing certain IHS criteria. For chronic headache, almost two-thirds (63%) of respondents reported using the transformed migraine diagnosis. For analgesic rebound headache, respondents preferred to make the diagnosis based on medication consumption that is lower than amounts stipulated in the IHS classification system. CONCLUSIONS: There remains a number of physicians interested in headache who do not use the IHS classification system, who modify the IHS criteria in practice, and who use the "transformed migraine" diagnosis for patients with chronic daily headache.

Neumann, F. J., A. Kastrati, et al. (2003). "Evaluation of prolonged antithrombotic pretreatment ("cooling-off" strategy) before intervention in patients with unstable coronary syndromes: a randomized controlled trial." *JAMA* **290**(12): 1593-9.

CONTEXT: In unstable coronary syndromes, catheter intervention is frequently preceded by antithrombotic treatment to reduce periprocedural risk; however, evidence from clinical trials to support antithrombotic pretreatment is sparse. OBJECTIVE: To test the hypothesis that prolonged antithrombotic pretreatment improves the outcome of catheter intervention in patients with acute unstable coronary syndromes compared with early intervention. DESIGN, SETTING, AND PATIENTS: Randomized controlled trial conducted from February 27, 2000, to April 8, 2002, and including patients admitted to 2 German tertiary care centers with symptoms of unstable angina plus either ST-segment depression or elevation of cardiac troponin T levels. INTERVENTIONS: Patients were randomly allocated to antithrombotic pretreatment for 3 to 5 days or to early intervention after pretreatment for less than 6 hours. In both groups, antithrombotic pretreatment consisted of intravenous unfractionated heparin (60-U/kg bolus followed by infusion adjusted to maintain partial thromboplastin time of 60 to 85 seconds), aspirin (500-

mg intravenous bolus followed by 100-mg twice-daily oral dose), oral clopidogrel (600-mg loading dose followed by 75-mg twice-daily dose), and intravenous tirofiban (10- microg/kg bolus followed by continuous infusion of 0.10 microg/kg per min). MAIN OUTCOME MEASURE: Composite 30-day incidence of large nonfatal myocardial infarction or death from any cause. RESULTS: Of the 410 patients enrolled, 207 were allocated to receive prolonged antithrombotic pretreatment and 203 to receive early intervention. Elevated levels of cardiac troponin T were present in 274 patients (67%), while 268 (65%) had ST-segment depression. The antithrombotic pretreatment and the early intervention groups were well matched with respect to major baseline characteristics and definitive treatment (catheter revascularization: 133 [64.3%] vs 143 [70.4%], respectively; coronary artery bypass graft surgery: 16 [7.7%] vs 16 [7.9%]). The primary end point was reached in 11.6% (3 deaths, 21 infarctions) of the group receiving prolonged antithrombotic pretreatment and in 5.9% (no deaths, 12 infarctions) of the group receiving early intervention (relative risk, 1.96 [95% confidence interval, 1.01-3.82]; P =.04). This outcome was attributable to events occurring before catheterization; after catheterization, both groups incurred 11 events each (P =.92). CONCLUSION: In patients with unstable coronary syndromes, deferral of intervention for prolonged antithrombotic pretreatment does not improve the outcome compared with immediate intervention accompanied by intense antiplatelet treatment.

Nilsson, U., N. Rawal, et al. (2003). "A comparison of intra-operative or postoperative exposure to music--a controlled trial of the effects on postoperative pain." *Anaesthesia* **58**(7): 699-703.

The effect of intra-operative compared to postoperative music on postoperative pain was evaluated in a controlled trial. In all, 151 patients undergoing day case surgery for inguinal hernia repair or varicose vein surgery under general anaesthesia were randomly allocated to three groups: group 1 listened to music intra-operatively, group 2 listened to music postoperatively and group 3, the control group, listened to 'white noise'. The anaesthetic and postoperative analgesic techniques were standardised. Pain was assessed using a numeric rating scale (0-10) and patients requirements for postoperative morphine, paracetamol and ibuprofen was recorded. The effect of music on nausea, fatigue and anxiety was also investigated. The results showed that patients exposed to music intra-operatively or postoperatively reported significantly lower pain intensity at 1 and 2 h postoperatively and patients in the postoperative music group required less morphine at 1 h compared to the control group. No differences were noted in the other variables. This study demonstrates that there is a short-term pain-reducing effect of music therapy however, the beneficial effects do not differ if the patient is exposed to music intra-operatively or postoperatively.

Nordahl, S. and S. Kopp (2003). "Pressure pain threshold of the posterior aspect of the temporomandibular joint measured with a semi-spherical probe." *Journal of Orofacial Pain* **17**(2): 145-50.

AIMS: To develop and test a probe for measurement of the pressure pain threshold (PPT) over the posterior aspect of the temporomandibular joint (TMJ) in healthy individuals, including determination of PPT levels, reliability, and the smallest detectable difference (SDD) between measurements. METHODS: A semi-spherical probe was designed to measure PPT levels over the posterior aspect of the TMJ through the external auditory meatus. The probe was connected to an electronic algometer. Three consecutive measurements were performed with this probe over the posterior and lateral aspects of the left and right TMJs as well as over a reference point on the forehead (glabella) in 31 healthy subjects: 10 male and 21 female. Measurements were also performed for comparison with a conventional flat probe with a 1 cm² area over the lateral aspect of the TMJ and the reference point.

RESULTS: The PPT measured with the semi-spherical probe and the conventional probe showed similar degrees of interindividual variation and reproducibility. The relative SDD, expressed as the percentage of the mean PPT for 2 measurements, showed similar levels for the flat and semi-spherical probes, i.e., 28% to 32% of the mean PPT at the TMJ. CONCLUSION: The semi-spherical probe shows similar reliability and relative SDD for measurement of PPT levels over the posterior aspect of the TMJ in healthy individuals as measurement over the lateral aspect with a flat probe. Measurement of the posterior PPT with a semi-spherical probe may be a useful adjunct to conventional lateral PPT measurements.

Oberholzer, T. G. (2003). "The reduction of postoperative pain after amalgam fillings." SADJ **58**(2): 74-5.

Ong, K. S. and R. A. Seymour (2003). "Maximizing the safety of nonsteroidal anti-inflammatory drug use for postoperative dental pain: an evidence-based approach." Anesthesia Progress **50**(2): 62-74.

This article reviews the use of nonsteroidal anti-inflammatory drugs (NSAIDs) for postoperative dental pain. An evidence-based approach is used to evaluate the clinical studies to date on the safe use of these drugs in dental patients. No drugs are without adverse effects or are perfectly safe, but their safe use in clinical practice would entail maximizing the therapeutic efficacy and minimizing the adverse effects. Therapeutic recommendations are made after reviewing the evidence for the safe use of NSAIDs in postoperative dental pain. [References: 67]

Ornato, J. P. and A. American College of Cardiology/American Heart (2003). "Management of patients with unstable angina and non-ST-segment elevation myocardial infarction: update ACC/AHA guidelines." American Journal of Emergency Medicine **21**(4): 346-51.

Oxtoby, K. (2003). "Mind your back." Nursing Times **99**(28): 20-5.

Paech, M. J., C. B. Lim, et al. (2003). "A new formulation of nasal fentanyl spray for postoperative analgesia: a pilot study." Anaesthesia **58**(8): 740-4.

Twenty-four gynaecological patients receiving postoperative patient-controlled analgesia were enrolled in an open cross-over pilot study evaluating two new formulations of nasal fentanyl spray. The primary outcome was the bioavailability of nasal fentanyl in comparison with intravenous fentanyl. This manuscript describes the clinical outcomes of quality of postoperative analgesia and patient acceptability. There were 21 complete data sets for both sequences of the cross-over design. In randomised order, patients received approximately 50 microg of fentanyl in a single dose by intranasal and intravenous administration, but separated by at least 2 h. Analgesia was of rapid onset (within 5 min) and similar quality. There was no significant difference in side-effects. Four patients experienced mild nasal stinging and although 10 (42%) preferred intravenous administration, seven (29%) preferred intranasal and six (25%) had no preference. We conclude that these formulations of fentanyl, delivered as nasal spray, have potential clinical utility.

Pappagallo, M., B. Breuer, et al. (2003). "Treatment of chronic mechanical spinal pain with intravenous pamidronate: a review of medical records." Journal of Pain & Symptom Management **26**(1): 678-83.

We explored the effect of intravenous infusions of a bisphosphonate, pamidronate, in the management of chronic mechanical spinal pain, a worldwide public health problem in terms of lost workdays, medical treatment costs, and suffering. Bisphosphonates have an anti-nociceptive effect in animals. In humans, intravenous pamidronate relieves numerous painful conditions, including metastatic

bone pain, ankylosing spondylitis, rheumatoid arthritis, and complex regional pain syndrome. We reviewed the charts of 25 patients who had experienced disabling spinal pain for several years, and whom we treated with intravenous pamidronate. None had a history of osteoporotic vertebral fractures or metastatic disease. Pain rating scores decreased in 91% of patients: on a 0-10 numeric rating scale, the mean pain change was -3.6 points and mean percentage change was -41% ($P < 0.0001$). There was no increase in opioid or nonopioid analgesic medications associated with pain relief. The apparent analgesic effect of pamidronate for chronic mechanical spinal pain needs to be confirmed with placebo-controlled trials.

Peolsson, A., R. Hedlund, et al. (2003). "Predictive factors for the outcome of anterior cervical decompression and fusion." European Spine Journal **12**(3): 274-80.

In a prospective study, 103 patients were randomised to anterior cervical decompression and fusion (ACDF) with a cervical carbon-fibre intervertebral fusion cage or the Cloward procedure. Preoperative background variables, active range of neck motion, handgrip strength, radiological evaluation and subjective variables were used in a multiple regression model to find the strongest predictors of postoperative outcome as measured by current pain intensity and the Neck Disability Index (NDI). Male sex, greater kyphosis at the level operated on, non-smoking, a greater neck mobility in right rotation, low disability on NDI, and older age were predictors of pain reduction and explained 30% of current pain intensity at follow-up. Higher educational level, non-smoking, greater kyphosis at the level operated on, a greater flexion mobility, greater right handgrip strength and lower current pain intensity were predictors of improvement, and explained 28% of the postoperative outcome on NDI. The most important predictor for postoperative pain intensity was the magnitude of the preoperative kyphosis. Preoperative pain intensity was the most important predictor for improved NDI. At follow-up about 70% of the patients still had deficit based on current pain intensity and NDI, and 44% had remaining dysfunction based on Odom's criteria. In conclusion, the multivariate analysis shows that male sex, non-smoking, greater segmental kyphosis and a low pain and disability level are preoperative predictors of a good outcome in ACDF. In addition, the study suggests the importance of other predictive variables than those studied for the outcome of ACDF.

Petersen, P., C. Gao, et al. (2003). "Pain intensity and biomechanical responses during ramp-controlled distension of the human rectum." Digestive Diseases & Sciences **48**(7): 1310-6.

The current study aimed to refine the conventional distension model in the human rectum by measuring the cross-sectional area with a ramp-controlled impedance planimetric system. After preconditioning, the rectum in seven volunteers was distended 56 times with infusion rates of 50, 100 and 200 ml/min and at 100 ml/min during relaxation of the smooth muscle with glucagon. The pump was reversed at maximal tolerated pain. The subjects tolerated a higher volume and pressure with a more reliable sensory rating after preconditioning of the tissue. The three distension rates resulted in different pressure and tension at the maximal pain intensity ($P < 0.02$ and $P < 0.05$) with a decrease after relaxation of the smooth muscle with glucagon ($P < 0.05$). On the other hand, the cross-sectional area and volume were robust, did not show strain-rate dependency, and were not affected by muscle relaxation. Since the cross-sectional area is directly related to the deformation of the gut wall and hence to the strain, the study supports the idea that, independent of the muscular function, the mechano sensitive nociceptors in the human rectum depend directly on circumferential wall strain rather than on pressure and tension.

Phibbs, B. (2003). "Angina pectoris without chest pain.[comment]." Circulation **108**(6): e37; author reply e37.

Porzio, G., F. Aielli, et al. (2003). "Knowledge and attitudes of Italian medical oncology residents toward the approach and treatment of pain.[comment]." Journal of Pain & Symptom Management **26**(1): 590-2.

Potter, J., I. J. Higginson, et al. (2003). "Identifying neuropathic pain in patients with head and neck cancer: use of the Leeds Assessment of Neuropathic Symptoms and Signs Scale." Journal of the Royal Society of Medicine **96**(8): 379-83.

The Leeds Assessment of Neuropathic Symptoms and Signs Scale (LANSS) is a simple bedside test in two parts—a patient-completed questionnaire and a brief clinical assessment. Its diagnostic capabilities have never been tested in patients with cancer pain. To determine these we conducted a prospective study in outpatients with head and neck cancer. All patients with pain completed the LANSS and underwent a medical assessment with a palliative care physician, whose findings were then reviewed by a pain specialist blinded to the LANSS scores. We assessed acceptability and understanding of the LANSS by patients and calculated the sensitivity and specificity of total LANSS scores and subscores derived from the patient-completed section. Of 130 patients approached, 125 took part. 25 (20%) of these had cancer related pain, mean score on an 11 point numerical rating scale 6.3 (median 6.0, range 3-10). Average age was 60 years (median 60, range 27-84); 56% were male. LANSS completion time was about five minutes, and the procedure was acceptable to all patients. The pain specialist diagnosed neuropathic pain in 14/25 patients, in 13 of whom the neuropathic pain was part of a mixed pain picture. The LANSS correctly identified 11 of these cases (sensitivity 79%; specificity 100%). The patient-completed section alone had a sensitivity of 86% and a specificity of 91%. The LANSS is a simple and suitable screening test for neuropathic pain in patients with head and neck cancer related pain, although some modifications might improve it.

Quattrini, C. and S. Tesfaye (2003). "Understanding the impact of painful diabetic neuropathy." Diabetes/Metabolism Research Reviews **19**(Suppl 1): S2-8.

Painful neuropathy is a common and often distressing complication of diabetes. It has considerable impact on the social and psychological well-being of affected individuals. There are two distinct forms of painful neuropathy: an acute and self-limiting form that resolves within a year or a chronic form that can go on for years. There are now a number of drugs available for the treatment of neuropathic pain. However, some may fail to respond to these drugs or may have unacceptable adverse side effects. When this is the case, the patient's quality of life can be severely affected. Health care professionals need to assess the full impact of painful neuropathy. In this article we review a number of instruments that are used to assess the severity of painful neuropathy and its impact on the quality of life. Copyright 2003 John Wiley & Sons, Ltd. [References: 66]

Quiles, J., D. Roy, et al. (2003). "Relation of ischemia-modified albumin (IMA) levels following elective angioplasty for stable angina pectoris to duration of balloon-induced myocardial ischemia." American Journal of Cardiology **92**(3): 322-4.

The results in this study confirm and expand previous reports that ischemia-modified albumin (IMA) is an early marker of ischemia in the setting of percutaneous coronary intervention (PCI). We observed that IMA levels are related to the number of inflations, inflation pressure, and duration of inflations. It is therefore likely that IMA reflects the magnitude and duration of ischemia induced during PCI.

Rizzatti-Barbosa, C. M., M. T. Nogueira, et al. (2003). "Clinical evaluation of amitriptyline for the control of chronic pain caused by temporomandibular joint disorders." Cranio **21**(3): 221-5.

Temporomandibular disorder (TMD) is characterized by a combination of symptoms affecting the temporomandibular joint and/or chewing muscles. The two most common clinical TMD symptoms are pain and dysfunction. Pain is usually caused by dysfunction, and emergency therapy has focused on controlling it. Recent investigations into TMD have led to the recommendation of antidepressants as a supporting treatment against constant neuralgic pain. The aim of this double-blind study was to verify the efficiency of antidepressants (amitriptyline) as a support in the treatment of chronic TMD pain. Twelve female volunteers presenting chronic TMD pain were divided into two groups and treated for 14 days: Group 1 with 25 mg/day of amitriptyline and Group 2 with a placebo. The intensity of pain and discomfort was evaluated daily, using a visual analog scale (VAS), over a period of seven days preceding the treatment (baseline), during the 14-day treatment, and for seven days after the treatment. The results revealed a significant reduction of pain and discomfort in Group 1 (75%) compared to Group 2 (28%) during the three weeks beginning at baseline ($p < 0.01$). Amitriptyline proved to be an efficient alternative treatment for chronic pain in TMD patients.

Robson, P. and A. Hughes (2003). "Opioid dose requirements." Palliative Medicine **17**(4): 380.

Rodriguez, M. J., D. Contreras, et al. (2003). "Double-blind evaluation of short-term analgesic efficacy of orally administered dexketoprofen trometamol and ketorolac in bone cancer pain." Pain **104**(1-2): 103-10.

The analgesic efficacy and safety of dexketoprofen trometamol (the active enantiomer of the racemic compound ketoprofen) (25mg q.i.d.) vs. ketorolac (10mg q.i.d.) was assessed in 115 patients with bone cancer pain included in a multicenter, randomized, double-blind, parallel group study. A level of ≥ 40 mm on the 100 mm visual analog scale (VAS) and ≥ 10 in the pain rating index were required for inclusion. At the end of treatment on day 7 (+1 day), mean values of VAS were 32 ± 24 mm for dexketoprofen and 40 ± 30 mm for ketorolac ($P=0.12$) but the pain rating index was significantly lower in patients given dexketoprofen (8.5 ± 2.3 vs. 9.7 ± 2.9 , $P=0.04$). Moreover, most of the patients reached a pain intensity difference from baseline ≥ 20 mm (75% of patients for dexketoprofen and 65% of patients for ketorolac). Around half of patients in both treatments had a pain intensity < 30 mm on VAS at the end of treatment (55% for dexketoprofen and 47% for ketorolac). In the overall assessment of efficacy, a higher percentage of both patients and physicians rated dexketoprofen as 'quite effective' or 'very effective' compared to ketorolac. The percentage of patients withdrawn from the study for any reason as well as for insufficient therapeutic effect or due to adverse events was lower in the dexketoprofen group than in the ketorolac group. Treatment-related adverse events occurred in 16% of patients given dexketoprofen and in 24% given ketorolac. Serious adverse events occurred in 3.5% of patients from both groups but only one case of gastrointestinal hemorrhage was considered related to ketorolac. We conclude that dexketoprofen trometamol 25 mg q.i.d. oral route is a good analgesic therapy in the treatment of bone cancer pain, comparable to ketorolac 10 mg q.i.d., with a good tolerability profile.

Romano, J. M., M. P. Jensen, et al. (2003). "The Chronic Pain Coping Inventory-42: reliability and validity." Pain **104**(1-2): 65-73.

Coping responses have been shown to be associated with physical and psychological functioning in patients with chronic pain. Assessment of coping strategies has received increasing attention, with several measures of cognitive and

behavioral coping showing promise. One such instrument is the Chronic Pain Coping Inventory (Pain 60 (1995) 203), a 65-item measure of behavioral and cognitive pain coping strategies often targeted as part of multidisciplinary pain treatment. Initial research has supported the reliability and validity of the CPCI. This article describes the development of an abbreviated (42-item) CPCI. The results demonstrate very high correlations between the original and abbreviated CPCI scales, as well as comparable internal consistency, test-retest stability, and validity coefficients. The findings support the reliability and validity of the abbreviated CPCI, and suggest that it could be substituted for the CPCI without sacrificing reliability and validity in situations where a briefer measure of coping with chronic pain is preferable.

Romano, M., A. Giojelli, et al. (2003). "Chemoembolization for hepatocellular carcinoma: effect of intraarterial lidocaine in peri- and post-procedural pain and hospitalization." *Radiologia Medica* **105**(4): 350-5.

PURPOSE: To assess the efficacy of intraarterial lidocaine on peri- and post-procedural pain and on length of hospital stay in hepatocellular carcinoma (HCC) patients undergoing chemoembolization. **MATERIALS AND METHODS:** Twenty-eight patients (19M, 9F, age range 49-76) who underwent hepatic chemoembolization at our Institution between March 2000 and February 2002 were included in the study. Group A consisted of 14 patients who received intraarterial lidocaine immediately before and during chemoembolization, while in the 14 patients of group B lidocaine was substituted with saline solution. The doses of centrally acting narcotics (tramadol) administered periprocedurally and in the three days following the procedure were compared, as were the hospitalization times. Subjective pain was measured using the visual analogue scale. Chemoembolizations were performed with an emulsion of lipiodol, cisplatin and epirubicin followed by embolizing material (gelfoam of Contour particles) in order to achieve complete blood flow stop in the proper hepatic artery. **RESULTS:** No side effects were noted that could be due to systemic administration of lidocaine. All patients experienced some degree of post-embolization syndrome. Periprocedural, day 1 and day 2 post chemoembolization dosages of tramadol were significantly lower in group A with respect to group B patients. No group A patient required analgesia on day 3. No statistical difference was observed in time persistence of nausea and vomiting, fever and hospitalization time between the two patient groups. **CONCLUSIONS:** Intraarterial administration of lidocaine before and during chemoembolization is a safe and effective method for preventing or reducing peri- and post-procedural pain and dosage of narcotic analgesics in patients with HCC. Hospitalization times did not differ significantly between the two groups, probably because of the other components of post-embolization syndrome, such as fever, nausea and vomiting.

Rosseland, L. A., A. Stubhaug, et al. (2003). "Intra-articular (IA) catheter administration of postoperative analgesics. A new trial design allows evaluation of baseline pain, demonstrates large variation in need of analgesics, and finds no analgesic effect of IA ketamine compared with IA saline." *Pain* **104**(1-2): 25-34.

All previous studies of intra-articular (IA) analgesic drugs for postarthroscopy pain have administered test-drugs at the end of the arthroscopic procedure, before any baseline pain could be assessed. Assay sensitivity has often not been documented or has been assumed to be present if a placebo control group had significant pain during the observation period. We present an improved study design employing an IA catheter for test-drug administration only in patients with moderate-to-severe baseline pain within 2h postoperatively. Using this technique we explored the incidence of moderate-to-severe pain and possible predisposing factors for pain through a close follow-up of all patients. The study incorporated an explanatory study of IA ketamine. A double-blind, double-dummy technique was used. Summed pain intensity differences 0-120 min after test medication was the

primary outcome variable. Of 77 patients assessed for inclusion, only 45 had moderate or severe pain. Significantly more women (78%) than men (45%) had moderate-to-severe pain ($P < 0.005$). Those not included continued to have no or mild pain and consumed less rescue analgesics than those who had high baseline pain. Mean baseline pain in the patient group with moderate or severe pain was 50mm on a 0-100 mm visual analogue scale (VAS) ($SD = 15.1$) ($n = 45$). Mean VAS in the patient group with no or mild pain was 7.5mm ($SD = 8.7$) ($n = 32$). The new method for IA analgesic trials solves the problem with undesirable inclusion of patients with no or mild pain. We observed rapid onset and significant pain relief after IA injection of 10 ml saline with or without ketamine 10mg, but no difference between these two test medications. Intra-muscular ketamine 10mg showed significantly better early pain relief, global evaluation, and longer time to rescue analgesic, compared with IA ketamine 10mg.

Rustoen, T., S. D. Fossa, et al. (2003). "The impact of demographic and disease-specific variables on pain in cancer patients." Journal of Pain & Symptom Management **26**(2): 696-704.

The aim of this study was to examine to what extent demographic and disease-specific variables affected pain in cancer patients. Two to three weeks after their last hospitalization, 1,453 cancer patients completed questionnaires measuring demographic variables, quality of life, and pain (EORTC-QLQ C-30). Response rate was 72.1%. Data on type of cancer and the severity of the disease were also compiled. Sixty percent of the sample reported some pain. Type of cancer, presence of metastases, and time until death were significant predictors of experienced pain. The patients' experience of pain was mainly associated with disease-specific variables. Sex, age, level of education, and co-habitation were not related to pain, but employment status was. The patients on disability pensions had significantly more pain than the patients who were working or studying. Special attention should be given to patients with advanced prostate cancer with a short time to live, as they reported the most pain.

San Roman, J. A., A. Serrador, et al. (2003). "Diagnostic accuracy of a new shorter dobutamine infusion protocol in stress echocardiography." Heart (British Cardiac Society) **89**(9): 1089-90.

Sator-Katzenschlager, S. M., A. W. Schiesser, et al. (2003). "Does pain relief improve pain behavior and mood in chronic pain patients?" Anesthesia & Analgesia **97**(3): 791-7.

Chronic pain is a subjective experience and has not only physical, but also psychological and social dimensions. In the present study, we sought to determine whether an effective pain reduction would improve mood, behavioral, and cognitive outcome measures in chronic pain patients. Four-hundred-seventy-seven patients entering pain therapy at our university pain center were prospectively studied during the first year of treatment. Patients received pharmacotherapy, acupuncture, transcutaneous nerve stimulation, physiotherapy, and invasive pain treatment. Intensity and quality of pain were assessed with the Visual Analog Scale and Multidimensional Pain Scale. Psychological and social aspects were evaluated using the Pain Behavior Questionnaire and the Profile of Mood States questionnaire. Significant reductions in pain intensity (Visual Analog Scale, 7.35 at pretreatment and 1.03 after 12 mo; $P = 0.01$; Multidimensional Pain Scale, $F = 6.185$; $P < 0.001$) were accompanied by improvements in behavioral and cognitive dimensions (Pain Behavior Questionnaire, $F = 9.483$; $P = 0.002$). However, mood and psychological well-being did not improve (Profile of Mood States, $F = 0.416$; $P = 0.551$). The authors conclude that reducing pain intensity improves behavioral and cognitive dimensions but not psychological well-being and cognitive assessment.

Savage, S. R., D. E. Joranson, et al. (2003). "Definitions related to the medical use of opioids: evolution towards universal agreement." Journal of Pain & Symptom Management **26**(1): 655-67.

Misunderstandings regarding the nature and occurrence of addiction have historically been barriers to the appropriate treatment of pain and have stigmatized the medical use of opioids. This article reviews the evolution of nomenclature related to addiction, presents current scientific understanding of addiction that may help shape universally acceptable terminology, and discusses an integrated effort of pain and addiction professionals to reach consensus on addiction-related terms. The article suggests key principles that may clarify terminology including: clear differentiation of the concepts of addiction and physical dependence, conceptualization of addiction as a multidimensional disease, and use of a label for the phenomenon of addiction that does not include the ambiguous term "dependence." More universal agreement on terminology related to addiction is expected to improve the treatment of both pain and addictive disorders; improve communication between health care providers, regulators, and enforcement agencies; and reduce health care and other societal costs. [References: 69]

Shapiro, H. (2003). "Could n-3 polyunsaturated fatty acids reduce pathological pain by direct actions on the nervous system?" Prostaglandins Leukotrienes & Essential Fatty Acids **68**(3): 219-24.

The intake of n-3 polyunsaturated fatty acids (PUFAs) in many industrialized countries is relatively low and its increased consumption has protective and modifying effects on such diverse conditions as atherosclerosis, ventricular arrhythmias, multiple sclerosis, major depression and inflammatory and autoimmune diseases. In addition, n-3 PUFAs have been shown to alleviate pain in patients with rheumatoid arthritis, inflammatory bowel disease and in a number of other painful conditions. This has been attributed to the inhibition of pro-inflammatory eicosanoid and cytokine production by peripheral tissues. n-3 PUFAs have also been shown to inhibit eicosanoid production in glial cells, block voltage-gated sodium channels (VGSCs), inhibit neuronal protein kinases and modulate gene expression. They also appear to have mood-stabilizing and sympatholytic effects. The present article explores the possibility that, based on what is known about their neural and non-neural effects, n-3 PUFAs directly attenuate the neuronal and glial processes that underlie neuropathic and inflammatory pain. [References: 70]

Shen, C. C., M. P. Wu, et al. (2003). "Effects of closed suction drainage in reducing pain after laparoscopic-assisted vaginal hysterectomy." Journal of the American Association of Gynecologic Laparoscopists **10**(2): 210-4.

STUDY OBJECTIVE: To estimate whether closed suction drainage of the pelvis after laparoscopic-assisted vaginal hysterectomy (LAVH) reduces the frequency and intensity of shoulder-tip, abdominal, and back pain. **DESIGN:** Prospective, randomized study (Canadian Task Force classification 1). **SETTING:** Teaching medical center. **PATIENTS:** One hundred sixty-four women. **INTERVENTION:** LAVH. **MEASUREMENTS AND MAIN RESULTS:** For group 1 (80 women), closed suction (Jackson-Pratt) drains were inserted into the peritoneal cavity and cul-de-sac, whereas for group 2 (84), no drains were placed. Shoulder-tip, abdominal, and back pain were evaluated by visual analog scores (VAS) 3, 24, and 48 hours after surgery. The frequency of shoulder-tip pain was significantly lower in group 1 at 24 hours (23% vs 40%, $p = 0.013$) and 48 hours (9% vs 21%, $p = 0.024$; VAS scores at 24 hrs 2.2 ± 1.1 vs 3.8 ± 1.3 , $p = 0.010$; VAS scores at 48 hours 1.5 ± 1.0 vs 2.5 ± 1.2 , $p = 0.018$). At 48 hours fewer women in group 1 experienced abdominal pain (31% vs 50%, $p = 0.039$; VAS scores 2.0 ± 1.1 vs 4.0 ± 1.3 , $p = 0.007$). No statistically significant differences in frequency and VAS scores for back pain were

found at any time. The quantity of oral analgesics was greater for group 2 than for group 1 (12.4 +/- 1.6 vs 9.0 +/- 1.4, $p < 0.001$). Economic evaluation of analgesic requirements and material costs for the two groups showed that simple analgesics were more cost-effective than closed suction drainage in the treatment of pain. CONCLUSION: Closed suction drains may reduce the frequency and intensity of shoulder-tip and abdominal pain and postoperative analgesia requirements after LAVH, but simple oral analgesics are more cost effective.

Shvartzman, P., M. Friger, et al. (2003). "Pain control in ambulatory cancer patients--can we do better?" Journal of Pain & Symptom Management **26**(2): 716-22.

To evaluate the degree of pain control among ambulatory cancer patients visiting the outpatient clinics of three oncology centers in south Israel, these patients were interviewed using the Brief Pain Inventory translated into Hebrew (BPI-Heb). Patients suffering from pain at least three times a week or reporting taking daily analgesics during the last two weeks were enrolled. Non-Hebrew speakers and patients too frail or ill were excluded. The study population included 218 subjects. Substantial pain was experienced by 77%, the majority was not adequately treated (81%), and 75% were undermedicated. The daily living activities of the majority of patients (64%) were moderately to severely impacted. Pain control was not associated with any of the sociodemographic or previous treatment profile variables, or by physicians' pain assessment. The physicians' and the patients' ratings of the extent to which pain interfered with the patients' activities fully agreed (+/-2) in fewer than half of the patients. Physicians estimated more severe pain levels, but underestimated its impact on everyday life. These data indicate that better pain control for ambulatory cancer patients is needed and that more information about patients' pain and its impact should be solicited. Further training of care providers is needed to improve the relief from cancer pain and the quality of life of patients.

Sinvhal, R. M., R. M. Gowda, et al. (2003). "Enhanced external counterpulsation for refractory angina pectoris." Heart (British Cardiac Society) **89**(8): 830-3.

Enhanced external counterpulsation (EECP) is a non-invasive outpatient treatment used for angina pectoris. In patients with intractable angina refractory to aggressive surgical and medical treatment, several novel strategies are considered including EECP, transmural laser revascularisation, and spinal cord stimulation. EECP produces an acute haemodynamic effect that is presumed to be similar to that produced by the invasive intra-aortic balloon pump. By applying a series of compressive cuffs sequentially from the calves to the thigh muscles upon diastole and rapidly deflating the cuffs in early systole, an increase in diastolic and decrease in systolic pressure is created. Although data indicate improvement in angina in patients undergoing EECP, the role of EECP in the treatment of angina pectoris has not yet been well defined. At present, EECP use should be limited to patients with debilitating (functional class III and IV) refractory angina pectoris who are not candidates for revascularisation, are symptomatic despite being on maximal antianginal pharmacotherapy, and have no contraindications to EECP use.

Soares, L. G. (2003). "Poor social conditions, criminality and urban violence: Unmentioned barriers for effective cancer pain control at the end of life." Journal of Pain & Symptom Management **26**(2): 693-5.

Stamer, U. M. and F. Stuber (2003). "Postoperative epidural analgesia: how about quality assessment?[comment]." Anesthesia & Analgesia **97**(3): 918-9.

Stein, C., M. Schafer, et al. (2003). "Attacking pain at its source: new perspectives on opioids." Nature Medicine **9**(8): 1003-8.

The treatment of severe pain with opioids has thus far been limited by their unwanted central side effects. Recent research promises new approaches, including opioid analgesics acting outside the central nervous system, targeting of opioid peptide-containing immune cells to peripheral damaged tissue, and gene transfer to enhance opioid production at sites of injury. [References: 103]

Stomberg, M. W., B. Sjostrom, et al. (2003). "The role of the nurse anesthetist in the planning of postoperative pain management." AANA Journal **71**(3): 197-202.

Adequate pain relief after surgery is essential for avoiding pain-associated stress and patient comfort in the postoperative period. The Swedish nurse anesthetist has an important role in the intraoperative management of the surgical patient by assessing and moderating individual physiological response evoked by surgical stimuli during general anesthesia. The extent to which knowledge of specific individual response patterns are used to plan postoperative pain management is unknown. The aim of the present study was to assess the role of the nurse anesthetist in planning early postoperative pain management for surgical patients. Nurse anesthetists (N = 101) at 4 academic hospitals in Sweden responded to a questionnaire focusing, in addition to demographic data, on intraoperative routines for postoperative pain management, perceived clinical relevance of used routines, personal involvement (in addition to existing routines) in postoperative pain management, factors influencing pain alleviation requirements, and the potential role of the nurse anesthetist for improved postoperative pain management. We found that type of anesthesia and type of surgical procedure were both factors considered important for postoperative pain management. A majority of the participants believed that pain management approaches were not appropriately individualized to the patient.

Stone, A. A., J. E. Broderick, et al. (2003). "Intensive momentary reporting of pain with an electronic diary: reactivity, compliance, and patient satisfaction." Pain **104**(1-2): 343-51.

Patient self-reports are the primary method for capturing the experience of pain, and diaries are often used to collect patient self-reports. This study was designed to determine if momentary monitoring of pain with an electronic diary affected pain levels over time, if it affected weekly recall of pain, and if daily sampling density affected compliance rates and patients' reactions to the study. Ninety-one patients with chronic pain were randomized into four groups with differing levels of momentary monitoring over 2 weeks. Little support was found for reactivity defined as temporal shifts in pain over the study or as changes in recalled weekly pain due to momentary monitoring. Compliance with the electronic diary protocol was 94% or better, and was not related to sampling density. Patients reported little difficulty with the diary procedures and were not unduly burdened by the protocol.

Strobel, K., C. W. Pfirrmann, et al. (2003). "MRI features of the acromioclavicular joint that predict pain relief from intraarticular injection." AJR American Journal of Roentgenology **181**(3): 755-60.

OBJECTIVE: Our objective was to evaluate the predictive value of various MRI findings in the acromioclavicular joint for pain relief after intraarticular injection. **MATERIALS AND METHODS:** The acromioclavicular joint of 50 patients (20 women, 30 men; mean age, 51 years; range, 25-75 years) was evaluated on MRIs of the shoulder. Osteophytes, subchondral cysts and irregularities, bone marrow edema, joint effusion, and joint capsule hypertrophy were assessed by two musculoskeletal radiologists in consensus. Local anesthetics were injected into the acromioclavicular joint with fluoroscopic guidance. Patients graded pain relief on a visual analogue scale (0-100%) after 15 min. The relationship between pain relief and MRI findings

was assessed with the Mann-Whitney U test. Pain relief equal to or greater than 70% was rated as a positive response to the injection. This cutoff value was used to calculate sensitivity, specificity, accuracy, and predictive values of the various MRI findings in determining which acromioclavicular joints were responsive to joint injections. RESULTS: Mean pain relief after injection was 38%. Pain relief was significantly related to capsular hypertrophy ($p = 0.007$) and was equal to or greater than 70% in 11 patients. The sensitivity in diagnosing a successful injection (range, 9-82%) was highest for caudal osteophytes (82%) and capsular hypertrophy (73%). The specificity (range, 51-97%) was highest for subchondral cysts (97%), subchondral bone marrow edema (95%), and joint effusion (92%). CONCLUSION: Pain relief after intraarticular injection is significantly related to capsular hypertrophy diagnosed on MRI. MRI findings have a reasonable sensitivity and a high specificity in predicting relevant short-term pain relief after intraarticular injection.

Svensson, L., L. Isaksson, et al. (2003). "Predictors of myocardial damage prior to hospital admission among patients with acute chest pain or other symptoms raising a suspicion of acute coronary syndrome." Coronary Artery Disease **14**(3): 225-31.

AIM: To evaluate factors which, prior to hospital admission, predict the development of acute coronary syndrome or acute myocardial infarction among patients who call for an ambulance due to suspected acute coronary syndrome. DESIGN: Prospective observational study. METHODS: All the patients who called for an ambulance due to suspected acute coronary syndrome in South Hospital's catchment area in Stockholm and in the Municipality of Goteborg between January and November 2000, were included. On arrival of the ambulance crew, a blood sample was drawn for bedside analysis of serum myoglobin, creatine kinase (CK)MB and troponin-I. A 12-lead electrocardiogram (ECG) was simultaneously recorded. RESULTS: In all, 538 patients took part in the survey. Their mean age was 69 years and 58% were men. In all, 307 patients (57.3%) had acute coronary syndrome and 158 (29.5%) had acute myocardial infarction. Independent predictors of the development of acute coronary syndrome were a history of myocardial infarction ($P=0.006$), angina pectoris ($P=0.005$) or hypertension ($P=0.017$), ECG changes with ST elevation ($P<0.0001$), ST depression ($P<0.0001$) or T-wave inversion ($P=0.012$) and the elevation of CKMB ($P=0.005$). Predictors of acute myocardial infarction were being a man ($P=0.011$), ECG changes with ST elevation ($P<0.0001$) or ST depression ($P<0.0001$), the elevation of CKMB ($P<0.0001$) and a short interval between the onset of symptoms and blood sampling ($P=0.010$). CONCLUSION: Among patients transported by ambulance due to suspected acute coronary syndrome, predictors of myocardial damage can be defined prior to hospital admission on the basis of previous history, sex, ECG changes, the elevation of biochemical markers and the interval from the onset of symptoms until the ambulance reaches the patient.

Tittle, M. B., S. C. McMillan, et al. (2003). "Validating the brief pain inventory for use with surgical patients with cancer." Oncology Nursing Forum Online **30**(2): 325-30.

PURPOSE/OBJECTIVES: To examine the psychometric characteristics of the Brief Pain Inventory (BPI) for surgical patients with cancer and to compare the validity and reliability results between surgical and medical patients with cancer. DESIGN: Descriptive and correlational. SETTING: Inpatient units in two veterans hospitals. SAMPLE: 388 patients with cancer (medical $n = 229$, surgical $n = 159$). METHODS: The BPI was administered to patients once, and a pain visual analog scale (VAS) was administered to patients three times. The VAS was correlated with individual items of the BPI and with the Pain Interference Subscale of the BPI; correlations were conducted separately for medical and surgical patients as a study of validity. Reliability was assessed using Cronbach's alpha for each group. MAIN RESEARCH VARIABLES: Pain at its worst and least, current pain intensity, average

pain intensity, and pain relief. FINDINGS: Patients in both groups were predominantly male, older, and Caucasian. Means from both groups were similar for items on the BPI. Correlations between the Pain Interference Subscale and the other items on the BPI were similar for both groups. Correlations between the VAS and the Pain Interference Subscale of the BPI were equally high for the medical ($r = 0.71$, p less than 0.01) and surgical ($r = 0.73$, p less than 0.01) oncology groups. Reliability evaluated by the coefficient alpha was very high for the medical ($r = 0.95$) and surgical ($r = 0.97$) oncology groups. CONCLUSIONS: The BPI is equally valid and reliable for medical and surgical male, Caucasian patients with cancer. IMPLICATIONS FOR NURSING: Nurses working with patients with cancer can have confidence that the BPI will assist them in assessing and managing pain in both groups.

Tobinick, E. L. and S. Britschgi-Davoodifar (2003). "Perispinal TNF-alpha inhibition for discogenic pain." Swiss Medical Weekly **133**(11-12): 170-7.

OBJECTIVE: To examine the potential of etanercept, a biological inhibitor of tumour necrosis factor-alpha (TNF), delivered by perispinal administration, for the treatment of pain associated with intervertebral disc disease. METHODS: Charts from 20 selected patients treated at our private clinic by perispinal delivery of etanercept 25 mg for severe, chronic, treatment-resistant discogenic pain were reviewed. Therapeutic benefit was assessed clinically and was documented by changes in a validated pain instrument, the Oswestry Disability Index. The patients were treated off-label with etanercept as part of our usual practice of medicine. Five detailed case reports are presented, including three additional patients. RESULTS: Rapid, substantial and sustained clinical pain reduction was documented in this selected group of patients. The cohort of 20 patients had a mean age of 56.5 and mean duration of pain of 116 months. Nine of the patients had undergone previous spinal surgery; 17 had received an epidural steroid injection or injections (mean 3.2). This group of patients received a mean of 1.8 doses (range 1-5, median 1.0) of etanercept during the observation period. The mean length of follow-up was 230 days. Clinical improvement was confirmed by a decrease in the calculated Oswestry Disability Index from a mean of 54.85 +/- 12.5 at baseline, improving to 17.2 +/- 15.3 ($p < 0.003$) at 24 days and ending at 9.8 +/- 13 ($p < 0.003$) at 230 days. CONCLUSIONS: TNF inhibition by etanercept delivered by perispinal administration may offer clinical benefit for patients with chronic, treatment-resistant discogenic pain. Further study of this new treatment modality is warranted.

Tuncer, S., L. Pirbudak, et al. (2003). "Adding ketoprofen to intravenous patient-controlled analgesia with tramadol after major gynecological cancer surgery: a double-blinded, randomized, placebo-controlled clinical trial." European Journal of Gynaecological Oncology **24**(2): 181-4.

Ketoprofen is a NSAIDs of the 2-aryl propionic acid class commonly used in the treatment of inflammatory rheumatic disease, acute pain and fever. Clinically, ketoprofen seems to reduce morphine requirements by 33 to 40% with ketoprofen's supposed central mechanism of analgesia. We evaluated the efficacy and safety of intravenous (IV) ketoprofen as an adjuvant to IV PCA (patient controlled analgesia) with tramadol after major gynecological cancer surgery for postoperative analgesia. Fifty patients were enrolled in this double-blinded, randomized, placebo-controlled study. Patients were allocated randomly to two groups: group I (25 patients) served as a control group, with patients receiving saline; group II (25 patients) received ketoprofen. Patients received an intravenous bolus of saline or 100 mg ketoprofen at the end of surgery. Then, PCA was given as a 20 mg tramadol bolus and 10 min lockout time. Pain relief was regularly assessed using a visual analog scale. Tramadol consumption, side-effects, and patient satisfaction were noted during the 24 hours after the surgery. No significant difference was observed in pain score, side-effects

and patient satisfaction between the groups ($p > 0.05$). The cumulative PCA-tramadol consumption was lower in the ketoprofen-treated patients than placebo-treated patients ($p < 0.05$). Our results demonstrate that a single dose of 100 mg ketoprofen reduced tramadol consumption for treatment of postoperative pain after major gynecological cancer surgery.

Unlugenc, H., M. Ozalevli, et al. (2003). "Pre-emptive analgesic efficacy of tramadol compared with morphine after major abdominal surgery." BJA: British Journal of Anaesthesia **91**(2): 209-13.

BACKGROUND: Studies of pre-emptive analgesia in humans have shown conflicting results. This prospective, randomized, double-blind, controlled study was designed to test the hypothesis that a reduction in postoperative morphine consumption can be achieved by tramadol administered after induction of anaesthesia. **METHODS:** Ninety patients were allocated randomly to receive i.v. tramadol (1 mg kg⁻¹) (Group T), morphine (0.1 mg kg⁻¹) (Group M) or saline 2 ml (Group S) after induction of anaesthesia. At peritoneal closure, a standardized (0.1 mg kg⁻¹) morphine loading dose was given to all patients for postoperative pain management. Patients were allowed to use a patient-controlled analgesia (PCA) device giving bolus doses of morphine 0.025 mg kg⁻¹. Discomfort, sedation, pain scores, cumulative morphine consumption, and side-effects were recorded at 1, 2, 6, 12 and 24 h after the start of PCA. **RESULTS:** There were no significant differences between groups in mean pain, discomfort, and sedation scores at any study period. Cumulative morphine consumption was significantly lower in Group M at 12 and 24 h after starting the PCA than in Group S. In Group T, it was lower only after 24 h (28% less in Group M and 17% less in Group T; $P < 0.017$). There were no significant differences in morphine consumption between Groups T and M. **CONCLUSIONS:** Tramadol (1 mg kg⁻¹), administered after induction of anaesthesia, offered equivalent postoperative pain relief, and similar recovery times and postoperative PCA morphine consumption compared with giving morphine 0.1 mg kg⁻¹. These results also suggest that presurgical exposure to systemic opioid analgesia may not result in clinically significant benefits .

Valentine, A. D. (2003). "Cancer pain and depression: management of the dual-diagnosed patient." Current Pain & Headache Reports **7**(4): 262-9.

Depressive disorders and pain syndromes are very common in the experience of cancer patients and may be experienced simultaneously. There is an intuitive association between cancer pain and cancer depression, both of which are multidimensional entities. Research has suggested, but not conclusively proven a cause-effect relationship. Suicidal ideation is a common concern in cancer patients with severe depression or pain. Antidepressant therapy is a mainstay of management of depression. That some antidepressants have use in the management of cancer pain may influence choice of drug selection in depressed patients. Antidepressant side effects and the patient's drug history are relevant variables. Because antidepressants that are effective as coanalgesics may not be tolerated at doses effective for depression, the clinician must be familiar with newer classes of antidepressants and psychostimulants. Combination drug therapy may be required. Psychotherapy also is common to the treatment of cancer pain and depression. With or without the intervention of pain and mental health specialists, ongoing supportive therapy from the primary clinician is essential. [References: 49]

Vercellini, P., G. Aimi, et al. (2003). "Laparoscopic uterosacral ligament resection for dysmenorrhea associated with endometriosis: results of a randomized, controlled trial." Fertility & Sterility **80**(2): 310-9.

OBJECTIVE: To evaluate the efficacy of laparoscopic resection of the uterosacral ligaments in women with endometriosis and predominantly midline

dysmenorrhea. DESIGN: Randomized controlled trial. SETTING: Two academic departments. One hundred eighty patients undergoing operative laparoscopy as first-line therapy for stage I to IV symptomatic endometriosis. INTERVENTION(S): Operative laparoscopy including uterosacral ligament resection or conservative surgery alone. MAIN OUTCOME MEASURE(S): Proportion of women with recurrence of moderate or severe dysmenorrhea 1 year after surgery. RESULT(S): No complications occurred. Among the patients who were evaluable 1 year after operative laparoscopy, 23 of 78 (29%) women who had uterosacral ligament resection and 21 of 78 (27%) women who had conservative surgery only reported recurrent dysmenorrhea. The corresponding numbers of patients at 3 years were 21 of 59 (36%) women and 18 of 57 (32%) women, respectively. Time to recurrence was similar in the two groups. Pain was substantially reduced, and patients in both groups experienced similar and significant improvements in health-related quality of life, psychiatric profile, and sexual satisfaction. Overall, 68 of 90 (75%) patients in the uterosacral ligament resection group and 67 of 90 (74%) patients in the conservative surgery group were satisfied at 1 year. CONCLUSION(S): Addition of uterosacral ligament resection to conservative laparoscopic surgery for endometriosis did not reduce the medium- or long-term frequency and severity of recurrence of dysmenorrhea.

Vercellini, P., G. Frontino, et al. (2003). "Comparison of a levonorgestrel-releasing intrauterine device versus expectant management after conservative surgery for symptomatic endometriosis: a pilot study." Fertility & Sterility **80**(2): 305-9.

OBJECTIVE: To determine whether the frequency and severity of dysmenorrhea are reduced in women with symptomatic endometriosis in whom a levonorgestrel-releasing intrauterine device (Lng-IUD) is inserted after operative laparoscopy compared with those treated with surgery only. DESIGN: Open-label, parallel-group, randomized, controlled trial. SETTING: A tertiary care and referral center for patients with endometriosis. PATIENTS(S): Parous women with moderate or severe dysmenorrhea undergoing first-line operative laparoscopy for symptomatic endometriosis. INTERVENTION(S): Randomization to immediate Lng-IUD insertion or expectant management after laparoscopic treatment of endometriotic lesions. Proportions of women with recurrence of moderate or severe dysmenorrhea in the two study groups 1 year after surgery and overall degree of satisfaction with treatment. Moderate or severe dysmenorrhea recurred in 2 of 20 (10%) subjects in the postoperative Lng-IUD group and 9/20 (45%) in the surgery-only group. Thus, a medicated device inserted postoperatively will prevent the recurrence of moderate or severe dysmenorrhea in one out of three patients 1 year after surgery. A total of 15/20 (75%) women in the Lng-IUD group and 10/20 (50%) in the expectant management group were satisfied or very satisfied with the treatment received. CONCLUSION(S): Insertion of an Lng-IUD after laparoscopic surgery for symptomatic endometriosis significantly reduced the medium-term risk of recurrence of moderate or severe dysmenorrhea.

Walker, S. (2003). "Painless duties. Improved pain management plan at your long-term care facility." Contemporary Long-Term Care **26**(8): 20-2.

Wattie, M. L. and S. I. Jaggar (2003). "Sedative effects of morphine and clonidine.[comment]." BJA: British Journal of Anaesthesia **91**(3): 449; author reply 449-50.

Weber, M. (2003). "Opioid switching.[comment]." Journal of Clinical Oncology **21**(15): 3005; author reply 3005.

Weinstein, J. N. (2003). "Alternative aid for aching backs. Massage and spinal manipulation are about as effective as mainstream methods." Health News **9**(8): 4.

Wermeling, D., M. Drass, et al. (2003). "Pharmacokinetics and pharmacodynamics of intrathecal ziconotide in chronic pain patients." Journal of Clinical Pharmacology **43**(6): 624-36.

The pharmacokinetics and pharmacodynamics of ziconotide were assessed over a 48-hour period following intrathecal (i.t.) administration (1, 5, 7.5, or 10 micrograms) to 22 patients with chronic, nonmalignant pain. Plasma and cerebrospinal fluid (CSF) samples were obtained over a 24-hour period. Analgesic efficacy was monitored using Visual Analog Scale of Pain Intensity (VASPI) and Category Pain Relief Scores (CPRS) measurements. Pharmacokinetic (PK) parameters were calculated by noncompartmental methods. Plasma ziconotide data were insufficient for PK calculations. In CSF, the median half-life of ziconotide was 4.5 hours. The median CSF clearance and volume of distribution were 0.26 mL/min and 99 mL, respectively. CSF pharmacokinetics of ziconotide were linear, based on cumulative exposure and peak CSF concentrations. A dose-related analgesia was observed. Pharmacokinetic-pharmacodynamic efficacy and safety analyses showed that higher CSF ziconotide concentrations were generally associated with analgesia and increased incidence of nervous system adverse events following a 1-hour i.t. infusion.

White, J. R. and W. L. Bell (2003). "Dysphonia associated with carotidynia and migraine responding to dihydroergotamine." Headache **43**(1): 69-71.

Carotidynia is characterized by throbbing pain over the carotid artery and may be caused by migraine. We report a case of a 54-year-old woman with recurrent dysphonia associated with carotidynia and other features of atypical migraine that resolved after treatment with dihydroergotamine. To our knowledge, this is the first report of dysphonia associated with migraine.

Wientjes, K. A. (2003). "Learning to be "present" in the pain experience." Ostomy Wound Management **49**(6): 14-6.

Williams, M. and Q. J. Milner (2003). "Postoperative analgesia following renal transplantation - current practice in the UK.[comment]." Anaesthesia **58**(7): 712-3.

Wong, P., F. D. Chadwick, et al. (2003). "Intranasal fentanyl for postoperative analgesia after elective Caesarean section." Anaesthesia **58**(8): 818-9.

Yao, M. Z., J. F. Gu, et al. (2003). "Adenovirus-mediated interleukin-2 gene therapy of nociception." Gene Therapy **10**(16): 1392-9.

The effect of adenovirus-mediated interleukin-2 (IL-2) gene on rat basal nociceptive response and chronic neuropathic pain was explored. The paw withdrawal latency induced by radiant heat was used to evaluate the antinociceptive effect of adenovirus type 5 (Ad5) and Ad5-IL-2. The results showed that intrathecal delivery of Ad5-IL-2 exhibited obvious antinociceptive effects on basal nociceptive response and chronic neuropathic pain, which were maintained for 3 and 4 weeks, respectively. This suggested that the antinociceptive effect of Ad5-IL-2 on chronic neuropathic pain was greater than its effect on basal nociceptive response. Human IL-2 mRNA was detected by in situ hybridization in the spinal pia mater and parenchyma of the lumbar, sacral, thoracic and cervical regions, and gray matter had higher level of IL-2 expression than white matter. These data demonstrated that the IL-2 gene was transfected into spinal cord regions relevant to pain modulation. The expressed IL-2 protein profile in spinal cord detected by enzyme-linked immunosorbent assay coincided almost exactly with its antinociceptive effect. This

supported the hypothesis that the therapeutic effect of IL-2 gene was related to IL-2 protein expression. The study indicates that intrathecal delivery of adenovirus-mediated IL-2 gene has a relatively long antinociceptive effect.