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BOEHRINGER

WELCOME MESSAGES

WELCOME MESSAGE FROM THE PRESIDENT OF WIP

Dear Colleagues

Better education, better pain relief is the principle aim of World Institute of Pain.

World Institute of Pain established in 1993 is giving a struggle for the education of pain physicians all over the world for more than 15 years.

During these years WIP has organized 5 world congresses in Eilat-Israel, Istanbul-Turkey, Barcelona-Spain, Budapest-Hungary and now New York-USA.

Besides world congresses, 14 Annual Symposiums and cadaver workshops in Budapest, 6 workshops in Memphis, 7 Workshops and symposiums in London.

The board of examination formed by WIP organizes two examinations every year for Fellow of Interventional Pain Practice-FIPP and the total number of alumni from all over the world has reached to 500.

By 2008 with the formation of the new executive board, which has been enlarged by members at large representing our alumni from 28 countries forming 16 sections, pain practice journal, advisory board WIP has come to a new stage.

WIP is enlarging its activities to countries where we know that WIP devoted activities are held.

Greece is one of these countries, where World Institute of Pain has strong ties for more than a decade. In 2002 WIP has endorsed a meeting held in Santorini.

Now our colleagues from Greece supported by important bodies in Greece are organizing ALGOS-2009 to be held between 18-21 June in Mykonos, one of the most beautiful islands in Aegean Sea.

ALGOS-2009 will be a good opportunity to exchange views, to bring experts from all over the world to present their experience on pain management.

World Institute of Pain strongly supports this initiative which will be for the benefit of management of pain in the region.

On behalf of World Institute of Pain, I thank you for attending ALGOS-2009 in a sea where the word-algos has been pronounced by Hippocrates.

Prof. Serdar Erdine, MD, FIPP
President of World Institute of Pain

WELCOME MESSAGE FROM THE CHAIR OF THE ORGANIZING COMMITTEE

Dear Colleagues,

It is a great pleasure and honor for me to welcome you to the INTERNATIONAL SYMPOSIUM OF WIP "ALGOS 2009" to be held in the beautiful island of Mykonos. The symposium is organized by The Pain Relief and Palliative Care Center of the 1st Anesthesia Clinic of Athens University, in collaboration with the Anesthesia Clinics and Pain Centers of the Universities of Ioannina, Thessaloniki, Patras, Thessaly and Alexandroupolis.

This Symposium follows the very successful meeting in Santorini in 2002.

We hope you will enjoy the impressive scientific program with well known specialists from all over the world, that will best fulfill our mission of promoting education in Pain Management.

I cordially welcome you to enjoy the charms of Mykonos, the Cycladic island with the unique beauty and we trust that this will be another memorable WIP event.

On behalf of the Organizing Committee

Athina Vadalouca, MD, PhD, FIPP
Chair of the Organizing Committee

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The World Institute of Pain (WIP)

The Pain Relief and Palliative Care Center of the
1st Anesthesia Clinic of National and
Kapodistrian University of Athens

In collaboration with

University of Ioannina - Medical School
Department of Anesthesiology &
Postoperative Intensive Care

Medical School - Section Surgery
Department of Anesthesiology &
Intensive Care Medicine,
Aristotle University of Thessaloniki

Department of Anesthesiology and
Critical Care Medicine,
University of Patras

University of Thessaly, Medical School,
University Hospital of Larissa,
Anesthesiology Clinic

Democritus University of Thrace
Medical School,
Department of Anesthesiology
and Management of Pain

Under the Auspices of:

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ELPEN

INTERNATIONAL SYMPOSIUM OF THE WORLD INSTITUTE OF PAIN (WIP)

ALGOS 2009

18 – 21 JUNE 2009, MYCONOS ISLAND, GREECE

SCIENTIFIC PROGRAMME

14.00-18.00 *Registration*

15.00-17.00 **FREE PAPERS I**

ACUTE AND CHRONIC PAIN

Chair: E. Stavropoulou – A. Angel – K. Michaloliakou

1. **Postoperative analgesia and cognitive dysfunction in the elderly after orthopaedic surgery**
   Baltzis G. *et al*
2. **Continuous femoral nerve block in orthopaedic patients. Analysis of outcomes and complications**
   Spyrou E. *et al*
3. **Postoperative analgesia using morphine in major upper and lower abdominal surgery**
   Mavroudi E. *et al*
4. **The influence of age and gender in epidural morphine for postoperative pain**
   Mavroudi E. *et al*
5. **Suprascapular nerve block for pain relief of frozen shoulder**
   Spyrou E. *et al*
6. **Functional gastrointestinal disorders, chronic pain, chronic fatigue, and the potential role of H. Pylori**
   Naoum G. *et al*
7. **The effect of duloxetin in lower limb neuropathic pain in diabetic patients**
   Pavlidis M. *et al*
8. **Tolerance effect to pregabalin in the subpopulation of fibromyalgia**
   Kosma K.
9. **Oxycodone in obliterative arteriopathy pain of lower limbs in ederly**
   Paladini A. *et al*
10. **Differential diagnosis in pain medicine**
    Paladini A. *et al*

17.00-17.30 *Coffee Break*

17.30-19.00 **ROUND TABLE I**
ACUTE PAIN
Chair: K. Filos – H. Arnaoutoglou – K.Theodoraki

Thoracic CSE and MRI Anatomy of the thoracic spine
A. Van Zundert

Epidural analgesia for cardiothoracic surgery. Does it prevent chronic post-op pain?
E. Moka

Susceptibility to the development of posttraumatic chronic pain
C. Hartrick

19.00-19.30 **PLENARY LECTURE I**
Chair: S. Erdine – A. Vadalouca – I. Kouroukli

The impact of FIPP in Education of Pain Physicians
P. Raj

19.30-20.30 **OPENING CEREMONY**

19.30-20.00 **Welcome addresses**

20.00-20.30 **Opening Lecture**

"One pain, a thousand words" The toll payment of dignity
Liana Kanelli

20.30-23.30 ***Welcome Dinner***

SCIENTIFIC PROGRAMME

08.00-09.00 **FREE PAPERS II**

EXPERIMENTAL STUDIES IN PAIN – ADVANCED NEUROMODULATION SYSTEMS

Chair: V. Kalfakakou – N. Tsakabikas - D. Papadopoulos

11. **Analgesic effect exerted by exposure of Wistar rats to the NMR spectrum of morphine**
Verginadis I. *et al*

12. **Selective blockade of nociceptive afferents does not reduce neuropathic pain in rats**
Cheng J. *et al*

13. **Ropivacaine downregulates neutral endopeptidase (NEP) and induces Zinc inhibited Apoptosis on HaCaT cells**
Kontargiris E. *et al*

14. **Successful treatment of Charcot-Marie-Tooth chronic pain utilizing spinal cord stimulation: a case-study**
Skaribas I. M. *et al*

15. **Tarlov cysts as a cause of severe low back pain: a case report**
Stavropoulou E. *et al*

16. **The use of locally applied pulsed radiofrequency on the superior posterior iliac spine**
Wajer O.J.M. *et al*

09.00-10.30 **ROUND TABLE II**

NEW TRENDS IN CHRONIC PAIN MANAGEMENT

Chair: E. Argyra – A. Zaralidou – F. Papakalou

Management of Complex Regional Pain Syndromes
R. Rauck

Phantom limb pain
M. Karanikolas

Strategies to prevent chronic post-op pain
N. Rawal

10.30-11.00 **PLENARY LECTURE II**

Chair: M. Gouliami – P. Maidatsi - E. Krepi

Rapid onset opioids for breakthrough cancer pain
I. Siafaka

11.00-11.30 *Coffee break*

11.30-12.00 **PLENARY LECTURE III**
Chair: Ch. Iatrou – E. Vrachnou – E. Chondrelli

Chronic Pain Patient Management
D. D. Mitsikostas

12.00-13.30 **ROUND TABLE III**
INTERVENTIONAL PAIN MEDICINE
Chair: N. Mekhail – I. Siafaka – D. Papadopoulos

Update on Intrathecal Drug Delivery
R. Rauck

Update on ziconotide for intrathecal pain management
H.G. Kress

Update on thermal and cooled RF lesions
N. Mekhail

13.30-14.30 *Lunch Break*

14.30-15.30 **MEET THE EXPERTS**
Chair: J.C. Flores – K. Paterakis

Value of Neurostimulation for Chronic Pain
N. Mekhail

Trigeminal Neuralgia percutaneous interventions
S. Erdine

15.30-17.00 **ROUND TABLE IV**
CANCER PAIN AND PALLIATIVE CARE
Chair: D. Tzaninis – E. Papadopoulou – Ch. Karanastasi

Opioid Rotation in cancer patients
A. Bairaktari

Quality management in chronic pain clinics. Pro's and Con's
P. Mavrocordatos

Cost-effectiveness of Palliative Care: self evident or evidence-based?
E. Hatziandreou

08.00-08.30 **POSTER SESSION I for Viewing & Evaluation**

ACUTE AND CHRONIC PAIN

Chair: E. Karanika- V. Tsirtsiridou - I. Stavrou

P1 **Tramadol vs paracetamol. Analgesic effect and discharge time in one day cases in children**
Sarridou D. *et al*

P2 **Comparison of tramadol and nalbuphine for postoperative pain management in children**
Sarridou D. *et al*

P3 **Prospective examination to relationship of PCEA use and psychological variables in patients undergoing major abdominal surgery**
Papadima A. *et al*

P4 **Multimodal approach for pain management after lower limb amputation. Successful combination of continuous femoral blockade and parecoxib**
Sarridou D. *et al*

P5 **Epidural infusion of ropivacaine for postoperative analgesia in cancer patients**
Mavroudi E. *et al*

P6 **Comparison of tramadol 50mg and lidocaine 20mg as local anesthetics before insulated needle insertion in axillary blocks**
Papakitsos G. *et al*

P7 **Comparison of intravenous tramadol-metoclopramide and tramadol-ondansetron in the relief of postoperative pain in surgical dentistry**
Papakitsos G. *et al*

P8 **Revision surgery for lumbar spine degenerative disease: the role of neurostimulation**
Sarridou D. *et al*

P9 **PNB for fantom limb pain. Presentation of two cases**
Theodorou E. *et al*

P10 **Treatment of chronic headache with acupuncture protocol. Comparison with the results of international literature**
Gatzounis T. *et al*

Friday, June 19, 2009
HALL II

09.00-09.30	**WORKSHOP I** **NEUROSTIMULATION AND ULTRASOUND TECHNIQUES** G. Stamatiou – J. Skaribas
09.30-10.30	**HANDS-ON DEMONSTRATION WITH N.S. AND WITH ULTRASOUNDS MONITORING** **Upper extremities** G. Stamatiou – J. Skaribas
11.00-11.30	*Coffee break*
13.30-14.30	*Lunch Break*
14.30-15.00	**WORKSHOP II** **NEUROSTIMULATION AND ULTRA SOUND TECHNIQUES** E. Antonopoulou – L. Theocharis
15.00-16.00	**HANDS-ON DEMONSTRATION WITH N.S. AND WITH ULTRASOUNDS MONITORING** **Lower extremities** E. Antonopoulou – L. Theocharis
16.15-17.00	**WORKSHOP III** **LUMBOSACRAL EPIDUROSCOPY: ROLE IN MANAGING BACK & RADIATING PAIN** J. Heavner

09.30-11.00 **ROUND TABLE V**

DIFFERENT TECHNIQUES FOR THE MANAGEMENT OF ACUTE AND CHRONIC PAIN

Chair: M. Iskander – A. Mela – S. Douvli

Peripheral block in chronic pain. Are they evidence based
K. Papaioannou

Minimally invasive therapies for low back pain. Strategy is the key to success
Ph. Mavrocordatos

Accupuncture for acute and chronic pain: Is it evidence based
D. Vassilakos

11.00-11.30 *Coffee break*

11.30-12.00 **PLENARY LECTURE IV**

Chair: V. Chimonitsy-Kypriou – I. Kouroukli – D. Moumtzi

Intradiscal therapies. What is the evidence
S. Erdine

12.00-13.30 **SATELLITE SYMPOSIUM**

NEUROPATHIC PAIN

Chair: A. Krespi – M. Glinavou – P .Tsinari

Prevalence of NP. The magnitude of the problem
E. Argyra

Neurotoxicity after chemotherapy
D. Skarlos

New therapeutic strategies for NP
A. Vadalouca

13.30-14.30 *Lunch Break*

14.30-15.30 **MEET THE EXPERTS**

Chair: Th. Vogiatzaki – Ch. Michaloliakou - S. Poulopoulou

Opioids in the treatment of NP
E. Alon

Comorbidities and chronic pain
P. Mc Gowan

15.30-17.00 **ROUND TABLE VIII**

ACUTE AND CHRONIC PAIN MANAGEMENT

Chair: M. Konstantinidou – A. Zotou – A. Petsiti

Pain management in Emergency Medicine
Ch. Sklavou

Back pain in children
M. Papageorgiou

Acute Pain Service: how to set up. Pitfalls and what to score
V. Meeusen

17.15 Closing Remarks – Awards

20.30-24.00 *Gala Dinner*

SCIENTIFIC PROGRAMME

08.30-09.00 **WORKSHOP IV**
NEUROSTIMULATION AND ULTRA SOUND TECHNIQUES
Z. Gabopoulou – Ch. Chantzi

09.00-10.00 **HANDS-ON DEMONSTRATION WITH NEUROSTIMULATOR AND WITH ULTRASOUND MONITOR**
Upper extremities
Z. Gabopoulou – Ch. Chantzi

10.00-10.30 **WORKSHOP V**
IMPAR GANGLION BLOCK
D. Beltrutti

11.00-11.30 *Coffee break*

13.30-14.30 *Lunch Break*

14.30-15.00 **POSTER SESSION II for Viewing & Evaluation**
CHRONIC PAIN & CHRONIC CANCER PAIN
Chair: A. Katsilerou - D. Rapti

P11 **Misperception and inadequate pain management in cancer patients**
El-Foudeh M. *et al*

P12 **Management of neuropathic cancer pain: our clinical experience.**
Siafaka I. *et al*

P13 **The use of DN4 questionnaire for the diagnosis of neuropathic cancer pain**
Vadalouca A. *et al*

P14 **Chronic low back pain (LBP). Treatment with pregabaline and caudal anesthesia**
Arnaoutakis E. *et al*

P15 **Suprascapular nerve block (SNB) for the treatment of painful shoulder disorders**
Vitsara S. *et al*

P16 **Treatment of acute herpes zoster. Can we prevent postherpetic neuralgia?**
Moutzouri A. *et al*

P17 **Pain management evaluation of geriatric patients**
Alexandropoulos Chr. *et al*

P18 **Experience in chronic pain management using the Archimedes constant-flow infusion pump system for intrathecal delivery**
Papadopoulos G. *et al*

P19 **Memory and pain review**
Petsiti A. *et al*

P20 **Effectiveness of acupuncture protocol in treatment of chronic low back pain**
Bader A. *et al*

P21 **Variations of arteries, veins, nerves and lymph nodes of breast and axilla, and their significance in the modified radical mastectomy, in the removal of axillary lymph nodes and in regional anesthesia for breast surgery**
K. Mammas *et al*

15.00-15.30 **WORKSHOP VI**
NEUROSTIMULATION AND ULTRA SOUND TECHNIQUES
T. Goroszeniuk – Ch. Chantzi

15.30-16.30 **HANDS-ON DEMONSTRATION WITH NEUROSTIMULATOR AND WITH ULTRASOUND MONITOR**
Lower extremities
T. Goroszeniuk – Ch. Chantzi

16.30-17.15 **WORKSHOP VII**
SELECTIVE LUMBAR NERVE ROOT BLOCK
M. Iskander

20.30-24.00 ***Gala Dinner***

SPEAKERS' ABSTRACTS

THORACIC CSE & MRI ANATOMY OF THE THORACIC SPINE

Professor **Dr. André van Zundert**
Catharina Hospital, Eindhoven, Netherlands

Anesthesiologists are reluctant to consider higher levels for spinal anesthesia, largely due to direct threats to the spinal cord. In the past neurologists and radiologists performed subarachnoid myelographic injections at thoracic and cervical levels and high spinals were used for craniotomies. In pain therapy chordotomies require puncture of the dura mater and the cervical spinal cord to interrupt the lateral spinothalamic tract, while subarachnoid catheters are introduced in the thoracic region to halt cancer pain.

MRI studies were performed of the thoracic spine and revealed that the spinal cord tends to follow the straightest line through the imposed geometry of the spine. The posterior dura-spinal cord distance is, therefore, significantly greater in the middle thoracic region than at the upper and lower thoracic levels. In the thoracic region the spinal cord is located more anterior in the spinal canal, while in the lumbar region, both the termination of the spinal cord and the cauda equine are in the dorsal position. The space between the spinal cord and the posterior dura mater in the thoracic region is often even larger than the epidural depth. These findings were the basis to use the combined spinal-epidural anesthesia technique in patients undergoing upper abdominal surgery without using general anesthesia.

Although promising for some complicated patients, it is suggested to restrict this technique exclusively to experts in this field as subarachnoid anesthesia in the thoracic regional potentially can lead to more serious neurological complications when the spinal needle enters the spinal cord than at lumbar levels, and especially should local anesthetics be injected within the spinal cord itself.

References

1. Lee RA, van Zundert AAJ, Breedveld P, Wondergem JHM, Peek D, Wieringa PA. The anatomy of the thoracic spinal canal investigated with magnetic resonance imaging (MRI). Acta Anaesth Belg 2007; 58: 163-167.
2. Lee RA, van Zundert AAJ, Visser WA, Lataster LMA, Wieringa PA. Thoracic combined spinal-epidural (CSE) anaesthesia. SAJAA 2008; 14: 63-69.
3. van Zundert A, Stultiens G, Jakimowicz J, van Den Borne B, van der Ham W, Wildsmith J. Segmental spinal anaesthesia for cholecystectomy in a patient with severe lung disease. Br J Anaesth 2006; 96: 464-466.
4. van Zundert AAJ, Stultiens G, Jakimowicz JJ, Peek D, van der Ham WGJM, Korsten HHM, Wildsmith JAW. Laparascopic cholecystectomy under intentional segmental thoracic spinal anesthesia: a feasibility study. Br J Anaesth: 2007; 98: 682-686.

EPIDURAL ANALGESIA IN CARDIOTHORACIC SURGERY: DOES IT PREVENT CHRONIC POSTOPERATIVE PAIN?

Eleni Moka

Anaesthesiology Department, Creta InterClinic Hospital, Heraklion, Crete, Greece

Epidural Analgesia and Cardiac Surgery

The incidence of chronic pain after surgery varies depending on the site of operation. References regarding chronic postoperative pain after cardiac surgery procedures usually focus on the phenomen of poststernotomy neuralgia/pain or dysaesthesia. The frequency of chronic poststernotomy pain after cardiac surgery, according to some authors, fluctuates with percentages climbing up to above 50%, and according to others is found to be around 30%. The incidence of severe incapacitating chronic poststernotomy pain is quite consistently about 3 – 5%, with about one third of these patients reporting that chronic pain disturbs their everyday life and somehow interferes with sleep.

The aetiology is not known, but fractures or incomplete healing of sternum, costal fracture, injury of the brachial plexus and problems related to the use of sternal wire sutures, are mentioned as causes. The use of the internal mammary – thoracic artery (IMA or ITA) has also been suggested to increase the risk, due to intercostal nerves trauma, when dissecting the ITA. Younger patients seem to be at higher risk for long – lasting poststernotomy pain. Additionally, ischeamic coronary pain may sensitize the patient to chronic pain in the same area. In general, chronic pain after cardiac surgery is a problematic area because patients may present re – angina, and differentiating angina pectoris from the post surgery pain may be difficult.

More severe acute pain can signal abnormally severe tissue trauma due to a complication (haematoma, fracture, infection) or nerve entrapment, which then will develop to chronic pain. It is also possible that the endogenous pain control systems are weaker in these patients. The use of high thoracic epidural analgesia (HTEA) has become a frequent supplement to general anaesthesia in cardiac surgery. The potential advantages of HTEA include excellent analgesia, improved pulmonary function, haemodynamic stability, a decrease in stress response to sternotomy and cardiopulmonary bypass (CPB), and reduced risk of depression and post – traumatic stress.

Reduction of painful stimuli in the perioperative period may also reduce central sensitization at the dorsal horns and may attenuate the development of chronic pain. Local anaesthetics, when given epidurally, have the ability to block noxious input to the spinal cord and offer a different mechanism than opiates for modulating the development of chronic pain. However in two papers auditing the role of HTEA in reducing chronic poststernotomy neuralgia, it was not proven that HTEA contributed to a difference in the intensity or frequency of persistent chronic pain following sternotomy, compared with those patients receiving traditional opioid – based analgesia. Local anaesthetics or opioids may not provide total C – afferent blockade during surgery, and inflammation (secondary phase of injury) extends well into the postoperative period and may continue to cause central sensitization, once analgesics are withdrawn. Furthermore, weaknesses in the designing of the two retrospective studies (lack of randomization, relatively small number of patients) could explain why the authors could not find a protective effect of HTEA on chronic poststernotomy pain, neither weak, nor severe pain.

The correlation of the severity of acute pain and the development of chronic pain has previously been suggested. Patients who need more analgesics during the immediate postoperative period are more likely to develop chronic pain after cardiac surgery. Poststernotomy dysaesthesia is a common long term postoperative complication. The association with severity of immediate postoperative pain may indicate a neuropathic element that is usually unrelieved by conventional opioid analgesia. The causative relation still needs to be resolved. Persistent chronic pain following open heart surgery is common and future, prospective, randomized studies addressing the issue are recommended. It is interesting and important to try to elucidate causes and risk factors, because this allows us to look at strategies for prevention, since chronic poststernotomy pain is hard to treat effectively.

Epidural Analgesia and Thoracic Surgery

The development of chronic pain after thoracic surgery is a particularly undesirable, yet common complication. As the study of the pathophysiology of chronic pain with regard to the plasticity of the central nervous system advances, new insights are being gained into not only the potential origins of chronic postthoracotomy pain, but also its potential prevention and treatment options. Thoracotomy, along with limb amputation, is considered to be the procedure that elicits the highest risk of severe chronic postoperative pain. Chronic pain complaints after

thoracic surgery (postthoracotomy pain syndrome / PTPS) represent a significant clinical problem in 25 – 60 % of patients. A small subset of these patients experience persistent severe pain, which may be debilitating. Results from thoracic surgical procedures suggest multiple pathogenetic mechanisms that include pre-, intra-, and postoperative factors. The pain may be owing to various causes. Intercostal nerve injury seems to be the most important pathogenetic factor.

Because of the severe pain these patients may experience and the difficulty and expense associated with treatment, prevention may be the best strategy for dealing with this problem. Recent laboratory and clinical studies indicate that minimizing perioperative pain can suppress certain alterations in the nervous system that may prevent the genesis and maintenance of chronically painful conditions. This suggests that strategies for avoiding PTPS may begin with aggressive perioperative anesthetic and analgesic techniques. Thoracic epidural analgesia with local anaesthetics and opioids is regarded as the gold standard treatment for postthoracotomy pain management because it results in early extubation, better ventilator mechanisms and gas exchange, decreased incidence of atelectasis, pneumonia and chronic postoperative pain.

Randomized, double – blind trials on thoracic epidural analgesia (TEA) in relation to PTPS prevention, mainly deal with the concept of timing in relation to a preemptive effect. Preemptive analgesia attempts to reduce post – injury hypersensitivity by early analgesic treatment, prior to surgery, in order to reduce postoperative pain. Only chronic pain following thoracotomy has been found to be preempted by acute pain management and only by continuous thoracic epidural analgesia started before surgery. Recent reviews on effect of preemptive analgesic strategy have presented few trials on the relation to chronic pain, and only five RCTs have evaluated the preemptive effect of analgesia on PTPS. Two of the RCTs including 69 and 58 patients found TEA to reduce PTPS. In contrast, another trial on preemptive use of TEA (112 patients) found no advantage. It seems that the role of TEA on PTPS remains unclarified and questionable. Nevertheless, all of the above studies had insufficient methodology regarding follow up, lack of detailed pain assessment and lack of information on all other potential pathogenetic mechanisms.

In conclusion, the development of PTPS is a particularly undesirable yet common complication. The ongoing research into the development of chronic pain, including that observed after thoracic surgery, portends the development of further advances in options for its control. Further studies regarding the role of TEA are necessary in order to establish multidisciplinary strategies that will provide the foundation for the management of this challenging condition.

Literature

1. Defalque RJ, Bromley JJ. Poststernotomy neuralgia: A new pain syndrome. Anesth Analg, 1989; 69: 81 – 82.
2. Mailis A, Chan J, Basinski A, et al. Chest wall pain after aortocoranary bypass surgery using internal mammary artery graft: A new pain syndrome? Heart Lung, 1989; 18: 553 – 558.
3. Todd DP. Poststernotomy neuralgia: Anew pain syndrome. Anesth Analg, 1989; 69: 692.
4. Eng J, Wells FC. Morbidity following coronary artery revascularization with the internal mammary artery. Int J Cardiol, 1991; 30: 55 – 59.
5. Moore Robert, Follette DM, Berkoff HA. Poststernotomy fractures and pain management in open cardiac surgery. Chest, 1994; 106: 1339 – 1342.
6. Macrae WA. Chronic pain after sternotomy. Acta Anaesthesiol Scand, 2001; 45: 927 – 928.
7. Meyerson J, Thelin S, Gordh T, Karlsten R. The incidence of chronic poststernotomy pain after cardiac surgery – a prospective study. Acta Anaesthesiol Scand, 2001; 45: 940 – 944.
8. Kalso E, Mennander S, Tasmuth T, Nilsson E. Chronic post – sternotomy pain. Acta Anaesthesiol Scand, 2001; 45: 935 – 939.
9. Ho SC, Royse CF, Royse AG, Penberthy A, McRae R. Persistent pain after cardiac surgery: An audit of high thoracic epidural and primary opioid analgesia therapies. Anesth Analg, 2002; 95: 820 – 823.
10. Jensen MK, Andersen C. Can chronic poststernotomy pain after cardiac valve replacement be reduced using thoracic epidural analgesia? Acta Anaesthesiol Scand, 2004; 48: 871 – 874.
11. Alston P, Pechon P. Dysaesthesia associated with sternotomy for heart surgery. Br J Anaesth, 2005; 95: 153 – 158.
12. Taillefer MC, Carrier M, Belisle S, et al. Prevalence, characteristics and predictors of chronic non – angina postoperative pain after a cardiac operation: A cross – sectional study. J Thorac Cardiovasc Surg, 2006; 131: 1274 – 1280.
13. Latinen P, Kokki H, Hynynen M. Pain after cardiac surgery: A prospective cohort study of 1 – year incidence and intensity. Anesthesiology, 2006; 105: 794 – 800.
14. King KM, Parry M, Southern D, Faris P, Tsuyuki RT. Women's recovery from sternotomy – extension (Wrest – E) study: Examining long term pain and discomfort following sternotomy and their predictors. Heart, 2008; 94: 493 – 497.
15. Wildgaard K, Ravn J, Kehlet H. Chronic post – thoracotomy pain: A critical review of the pathogenetic mechanisms and strategies for prevention. Eur J Cardiothoracic Surg, 2009; in press.

16. Ochroch EA, Gottschalk A, Augostides J, Carson KA, Kent L, Malayaman N, Kaiser LR, Aukburg SJ. Long-term pain and activity during recovery from major thoracotomy using thoracic epidural analgesia. Anesthesiology, 2002; 97: 1234 — 1244.
17. Suzuki M, Haraguti S, Sugimoto K, Kikutani T, Shimada Y, Sakamoto A. Low – dose intravenous ketamine potentiates epidural analgesia after thoracotomy. Anesthesiology 2006; 105: 111 — 119.
18. Hu JS, Lui PW, Wang H, Chan KH, Luk HN, Tsou MY, Lee TY. Thoracic epidural analgesia with morphine does not prevent postthoracotomy pain syndrome: a survey of 159 patients. Acta Anaesthesiol Sin, 2000; 38: 195 — 200.
19. Joshi GP, Bonnet F, Shah R, Wilkinson RC, Camu F, Fischer B, Neugebauer EA, Rawal N, Schug SA, Simanski C, Kehlet H. A systematic review of randomized trials evaluating regional techniques for postthoracotomy analgesia. Anesth Analg, 2008; 107: 1026 — 1040.
20. Moiniche S, Kehlet H, Dahl JB. A qualitative and quantitative systematic review of pre-emptive analgesia for postoperative pain relief: the role of timing of analgesia. Anesthesiology, 2002; 96: 725 — 741.
21. Bong CL, Samuel M, Ng JM, Ip-Yam C. Effects of preemptive epidural analgesia on post-thoracotomy pain. J Cardiothorac Vasc Anesth, 2005; 19: 786 —793.
22. Obata H, Saito S, Fujita N, Fuse Y, Ishizaki K, Goto F. Epidural block with mepivacaine before surgery reduces long-term post-thoracotomy pain. Can J Anaesth, 1999; 46: 1127 — 1132.
23. Hazelrigg SR, Cetindaq IB, Fullerton J. Acute and chronic pain syndromes after thoracic surgery. Surg Clin North Am, 2002; 82: 849 – 865.
24. Koehler RP, Keenan RJ. Management of postthoracotomy pain: acute and chronic. Thorac Surg Clin, 2006; 16: 287 – 297.
25. Gerner P. Postthoracotomy pain management problems. Anesthesiol Clin, 2008; 26: 355 – 367
26. Durá Navarro R, De Andrés Ibáñez J. A review of clinical evidence supporting techniques to prevent chronic postoperative pain syndromes. Rev Esp Anestesiol Reanim, 2004; 51: 205 – 212.

SUSCEPTIBILITY TO THE DEVELOPMENT OF POSTTRAUMATIC CHRONIC PAIN

Craig T. Hartrick, MD, FIPP

Chronic pain is widely recognized to be a multidimensional experience. Considering only the nociceptive component limits both the study and treatment of pain. Similarly, the development of chronic pain following injury is increasingly considered to be multifactorial. Affective, disuse, and suffering components of the pain experience, as well as the extent of acute pain, the effectiveness of analgesia, and the nature of the precipitating stimuli or trauma are also potential influences in the development of chronic posttraumatic pain.

Genetic susceptibility potentially contributes significantly to the genesis of chronic or persistent posttraumatic pain. Moreover, some of the aforementioned contributors themselves have genetic components. Given the fact that any single factor or stimulus may simultaneously both up-regulate and down-regulate the expression of thousands of genes, the multiple comparisons generated by a plethora of genetic and environmental stressors becomes mathematically overwhelming.

Strategies for improving statistical power include limiting comparisons to features suggested by biological rather than derived factors prior to study, controlling for known baseline susceptibility characteristics, and the use of case-control methodology. Selection of appropriate pain models and the potential for confounding contribute to the complexity of study design. Consequently, the multidimensional nature of pain itself should be respected when data mining for genetic and other susceptibility factors associated with the development of chronic posttraumatic pain.

PHANTOM PAIN

Menelaos Karanikolas, MD, MPH

Phantom pain is pain coming from a missing body part. Phantom sensations occur in most amputees, whereas phantom pain incidence varies between 0 and 88%. Phantom pain was considered a psychological problem in the past, but is now considered "real" pain, and evidence suggests that several mechanisms including the periphery, spinal cord and brain are involved in its generation. Several interventions proposed for phantom pain prevention and treatment are of poor or unproven efficacy.

Severe pre-amputation pain is associated with phantom pain development, but data on whether pre-amputation analgesia influences phantom pain are inconclusive. In 1988, Bach showed that epidural analgesia starting 3 days before amputation is associated with lower phantom pain frequency compared to conventional analgesia, 6 months after amputation. However, in 1997 Nikolajsen showed that epidural analgesia starting 18h before and continued after amputation does not prevent phantom pain.

Table 1: Data on perioperative analgesia and phantom pain.

Author, Journal, Year	Study design	Results:
Bach, Pain, 1988	Prospective, 11 pts epidural vs. 14 pts systemic analgesia	At 6 months, phantom pain frequency lower with epidural
Jahangiri, Ann R Coll Surg Eng, 1994	Prospective, 13 pts epidural vs. 11 pts systemic opioids	At 1 year, phantom pain frequency lower with epidural
Nikolajsen, Lancet, 1997	Prospective, 29 pts epidural vs. 31 pts systemic morphine	No difference
Shug, Reg Anesth 1995 (letter)	8 pts epidural vs. 8 pts systemic analgesia	At 1 year, phantom pain frequency lower with epidural
Katsuly – Liapis, Br J Anaesthes, 1996 (Abstract only)	Prospective, 12 pts epidural before and after, 12 pts epidural after, vs. 18 pts systemic analgesia	At 6 months, phantom pain frequency lower with epidural

Data from a randomized trial recently completed at Patras University suggest that optimized perioperative analgesia (epidural and/or IV PCA) reduces phantom pain frequency and intensity after lower limb amputation. These results are very encouraging, but have not been published yet.

STRATEGIES TO PREVENT CHRONIC POSTOPERATIVE PAIN

Narinder Rawal, MD, PhD
Orebro, Sweden

The processing of pain signals is a complex physiologic cascade involving multiple neurotransmit-ters and chemical substrates at various anatomic locations. Surgery produces an initial afferent bar-rage of pain signals and generates a secondary inflammatory response. These signals initiate pro-longed changes in both the peripheral and central nervous system leading to amplification and pro-longation of postoperative pain. Peripheral sensitization is a result of inflammation at the site of surgical trauma while central sensitization is due to persistent exposure to nociceptive afferent input from the peripheral neurons. These two processes contribute to the postoperative hypersensitivity state that is responsible for a decrease in the pain threshold at the site of injury (primary hyperalge-sia) and in the surrounding uninjured tissue (secondary hyperalgesia)[1]. Prolonged central sensitization can lead to permanent alterations in the CNS that contributes to chronic pain long after the acute stimulus has been withdrawn. The incidence of postsurgical pain that persists well beyond what might be expected can be very high. A review of the current literature reveals estimates such as 6-12% after craniotomy, 50-80% after leg amputation, 50% after thoracotomy, 11-57% after breast surgery, 3-56% after laparoscopic cholecystectomy and 12% following inguinal her-nior-rhaphy[1-3].

Risk factors for persistent postsurgical pain

In most patients postsurgical chronic pain resembles neuropathic pain and nerve damage during surgery seems to be a prerequisite for development of chronic pain. Hypoaesthesia due to nerve damage has been reported after mastectomy, hernia repair and mandibular osteotomy[2]. Other risk factors are presence of pain before surgery, severe and poorly relieved early postopera-tive pain, immobilization (extremity in cast), reoperations, radiation therapy and genetic and psychosocial factors[4].

Can chronic postsurgical pain be prevented?

Traditional analgesic drugs such as paracetamol and opioids may have only a minor modifying effect on nervous system plasticity and may not be effective in reversing the already established central sensitization[4]. Currently, it is unclear if pre-emptive or preventive analgesic techniques produce a meaningful reduction in the intensity or duration of chronic postsurgical pain. There is some evidence that regional anesthesia techniques such as epidural and paravertebral catheter techniques can reduce the risk of chronic pain after surgical procedures such as thoracotomy[5] and breast surgery[6]. Continuous epidural analgesia combined with ketamine has also been shown to prevent chronic pain after major abdominal surgery[7]. However, the role of regional analgesic tech-niques in reducing long-term phantom pain following lower extremity amputation is controver-sial mainly due to significant design flaws in published studies[1]. The authors of a recent systematic review of literature concluded that the trials do not provide evidence to support any par-ticular treatment of phantom limb pain in acute perioperative period or later[8]. Indeed, peripheral nerve block and neuraxial techniques may cause exacerbation of phantom pain; this reactivated pain is often severe and unresponsive to opioids[1,9].

Administration of local morphine at the iliac crest bone graft site has been shown to reduce post-operative pain in patients undergoing spine fusion surgery. More importantly, the incidence of per-sistent pain at 1 year was only 5% in local morphine group compared with 32% in the placebo group and 37% in i.m. morphine group[10]. Regional techniques have also been beneficial in patients undergoing hysterectomy[11] and C. section[12]. However, no benefits of regional techniques were reported following inguinal hernia surgery[13], hand surgery[14], or gynecological surgery[15].

Another approach consists of using drugs that may prevent the occurrence of postoperative allo-dynia and hyperalgesia. Subanesthetic doses of NMDA antagonist ketamine (0.1-0.5 mg/kg) have been shown to improve postoperative analgesia, decrease opioid requirements and decrease in the incidence of chronic pain several months after surgery[16,17]. The administration of gabapentin, which induces suppression of sodium and calcium channels and glutamate receptor activity at peri-pheral, spinal and supraspinal sites has been shown to markedly decrease opioid consumption when administered at the time of induction of anesthesia[2,18].

Preventive multimodal techniques may also be useful in preventing chronic pain. Gabapentin com-bined with local anesthetic and tricyclic antidepressant has been shown to reduce the risk of chronic pain after breast surgery[19]. A multimodal regimen consisting of rofecoxib, paracetamol, femoral nerve block and intraarticular injection of a "cocktail" containing morphine, clonidine and bupivacaine led to a reduction of pain, opioid use, PONV,

length of hospitalization and chronic pain of the knee[20]. Systemic opioids should be avoided, indeed postoperative allodynia and hyper-algesia could be worsened by administration of opioids[2,21].

Surgical techniques that avoid or reduce damage to nerves can reduce the risk of persistent post-operative pain considerably. Examples are laparoscopic herniorrhaphy, preservation of intercostal-brachial nerve during mastectomy, minimally invasive thoracoscopic techniques to spare intercostal nerves, muscle-sparing thoracotomy and other minimally invasive techniques for nephrectomy, sternotomy etc[3].

It has been proposed that the medical profession and public need to be educated about the problem. This is particularly relevant when patients wish to have surgery for reasons other than illness or disability, such inappropriate or unnecessary procedures include male and female sterilization and some types cosmetic surgery[22].

References

1. Reuben SS, Gadsden J. Preemptive analgesia, regional anesthesia, and the prevention of chronic postoperative pain. In: Regional Anesthesia and Acute Management (Ed Hadzic A). Arnold 2007, chapter 76, pp 1087-1103.
2. Bonnet F, Marret E. Postoperative pain management and outcome after surgery. Best Pract Res Clin Anaesth 2007;21:99-107.
3. Kehlet H, Jensen TS, Woolf CJ. Persistent postsurgical pain: risk factors and prevention. Lancet 2006;367:1618-1625.
4. Stubhaug A, Breivik H. Prevention and treatment of hyperalgesia and persistent neuropathic pain after surgery. In: Pain – Best Practice and Research Compendium (Eds Breivik H and Shipley M), Elsevier 2007, pp 281-286.
5. Senturk M, Ozcan PE, Talu GK, et al. The effects of three different analgesia techniques on long-term postthoracotomy pain. Anesth Analg 2002;94:11-15.
6. Kairaluoma PH, Bachmann MS, Rosenberg PH, Pere PJ. Preincisional paravertebral block reduces the prevalence of chronic postoperative pain after breast surgery. Anesth Analg 2006;103:703-708
7. Lavand'homme P, DeKock M, Waterloos H. Intraoperative epidural analgesia combined with ketamine provides effective preventative analgesia in patients undergoing major digestive sur-gery. Anesthesiology 2005;103:813-820.
8. Halbert J, Crotty M, Cameron ID. Evidence for the optimal management of acute and chronic phantom pain: A systematic review. Clin J Pain 2002;18:84-92.
9. Lee E, Donovan K. Reactivation of phantom limb pain after combined interscalene brachial plexus block and general anesthesia: Successful treatment with intravenous lidocaine. Anes-thesiology 1995;82:295-298.
10. Reuben SS, Viera P, Farugi S, et al. Local administration of morphine for analgesia after iliac graft harvest. Anesthesiology 2001;95:390-394.
11. Brandsborg B, Nikolajsen L, Hansen CT, Kehlet H, Jensen TS. Risk factors for chronic pain after hysterectomy: a nationwide questionnaire and database study. Anesthesiology 2007;106:1003-12.
12. Nikolajsen L, Sorensen HC, Jensen TS, Kehlet H. Chronic pain after Caesarean section. Acta Anaesthesiol Scand 2004;48:111-6.
13. Kalliomaki ML, Meyerson J, Gunnarsson U, Gordh T, Sandblom G. Long-term pain after inguinal hernia repair in a population-based cohort, risk factors and interference with daily activities. Eur J Pain 2008;12:214-25.
14. McCartney CJL, Brull R, Chan VWS, et al. Early but not long-term benefit of regional compared with general anesthesia for ambulatory hand surgery. Anesthesiology 2004;101:461-7.
15. Katz J, Cohen L. Preventive analgesia is associated with reduced pain disability 3 weeks but not 6 months after major gynecologic surgery by laparotomy. Anesthesiology 2004;101:169-74.
16. De Kock M, Lavand'homme P, Waterloos H. Balanced analgesia in the perioperative period: is there a place for ketamine? Pain 2001;92:373-380.
17. Bell RF, Dahl JB, Moore RA, Kalso E. Perioperative ketamine for acute postoperative pain. Cochrane Database of Systematic Reviews 2006;(1):CD004603.
18. Hurley RW, Cohen SP, Williams KA, et al. The analgesic effects of perioperative gabapentin on postoperative pain: a meta-analysis. Reg Anesth Pain Med 2006;31:237-247.
19. Fassoulaki A, Triga A, Melemeni A, Sarantopoulos C. Multimodal analgesia with gabapentin and local anesthetics prevents acute and chronic pain after breast surgery for cancer. Anesth Analg 2005;101:1427-1432.
20. Reuben SS, Gutta SB, Maciolek H, et al. Effect of initiating a preventative multimodal analge-sic regimen upon long-term patient outcomes after anterior cruciate ligament reconstruction for sameday surgery: a 1200-patient case series. Acute Pain 2005;7:65-73.
21. Dirks J, Moiniche S, Hilsted KL, Dahl JB. Mechanisms of postoperative pain: clinical indica-tions for a contribution of central neuronal sensitization. Anesthesiology 2002;97:1591-1596.
22. Macrae WA. Chronic post-surgical pain: 10 years on. Br J Anaesth 2008;101:77-86.

QUALITY MANAGEMENT IN CHRONIC PAIN CLINICS PRO'S AND CON'S

Philippe Mavrocordatos, MD, FIPP

Introduction Quality is a usually perceived as one more administrative procedure, one more control on our clinical practice. A closer, no emotional look, may give us a clearer view of the system and demonstrate the interrest of such management in the organisation of a pain clinic. Here, we are describing our own experience, the different steps needed for the set up of a ISO 9001 quality management system (QMS). This process takes a few months to achieve.

Analysis Essential phase describing the system (here the clinical activity) as it is before implementing the QMS. All activities, workplaces, information exchange, employees and materiel are reviewed before any change is made.

Elaboration phase Meetings and discussions take place to elaborate the architecture of the QMS and the procedures needed. Tasks and responsabilities are attributed. Quality endpoints (satisfaction,...) are described.

Implementation This starts with the application of the elaborated procedures, activities are registred. Tracability is mandatory.

Internal Audit It is the first evaluation. A quality certified collaborator of the hospital is asked to review the before the final exam. Improper procedures and mistakes are corrected.

Final certification A exam by an external certification organisation is made and when the system is conform to requirements, the system is certified.

Maintenance Regular analysis of the system is needed and required to maintain the system.

Pro's: We found the impact of this system essential to our daily activity. Functioning and organisation is well structured, activities are well traced, security of patients is increased. Planification is ameliorated. Satisfaction (team and patients) is increased.

Con's: Implementation is a difficult and heavy process. Maintenance of the QMS is time consuming and highly depends on team members collaboration.

MINIMALLY INVASIVE THERAPIES FOR LOW BACK PAIN. STRATEGY IS THE KEY TO SUCCESS

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Introduction

During these last years, minimally invasive diagnostic and therapeutic procedures have been developped and validated. This has significantly modified the approach of back pain patients, however, their use is often not based on a clear strategy.

The problem

A single pathology can give different clinical pictures, a similar clinical picture may reflect different pathologies and finally various pathologies may contribute to low back pain symptoms.

Basis for a strategic plan

Pain is a bio-psycho-social problem, multidimentional informations is mandatory. Questionnaires, history, physical exam, X-ray must be reviewed and diagnostic procedures performed. Once gathered, these data should be carefully balanced and a treatment elaborated. Safety of procedures and evidence of their validity are of utmost importance.

Strategic plan

1. Exclude red flags: infection, cancer, fracture, neurological deficit.
2. Assess the predominant factor amongst bio-psycho-social issues. If biology is predominant, the goal of your strategy is to determine the anatomical pain generator(s).
3. What structure is involved? main origins: discogenic - zygo-apophysial joints - sacro-iliac joints. If pain is mainly of biological origin, most pain generators will be found amongst them (≈70%).
4. Localize the approximate level of the origin of the pain, dorso-lumbar, lumbar, lumbo-sacral area.
5. When one must choose between equivalent test procedures, start with the safest.
6. Once you have decided which test procedure is more appropriate, always use local anesthetics to verify your hypothesis, repeat it twice at least. A placebo test is also recomended for specific procedures.
7. Once your tests have identified a structure as the pain generator, determine your treatment.

Conclusion

Interventional pain practice must be as safe, efficient and as cost effective as possible. Only a strict strategy can achieve these goals.

ACUPUNCTURE FOR ACUTE AND CHRONIC PAIN: IS IT EVIDENCE BASED?

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A Multi-centred RTC German paper(GERAC) for chronic low back pain involved 1162 patients. They evaluate the efficacy of verum Acupuncture (n = 387), sham Acupuncture (n = 387) and conventional treatment, a combination of drugs, physiotherapy and exercise (n = 388). At 6 months response rate was 47.6% in the verum acupuncture group, 44.2% in the sham acupuncture group, and 27.4% in the conventional treatment group. The effectiveness of acupuncture, whether true or sham, is almost twice as good as conventional treatment

An other Systematic Review on Effectiveness of Acupuncture for Low Back Pain by Jing Yuan, with 23 studies (n = 6359) support that: There is medium evidence that acupuncture is more effective than no treatment , and strong evidence that there is significant difference between acupuncture and sham acupuncture for the relief of pain. Also there is strong evidence that acupuncture acts complementarily to other conventional treatment for LBP. They *Conclude that Acupuncture versus no treatment, and as an adjunct to conventional care, should be advocated in the European Guidelines for the treatment of chronic LBP.*

A systematic review and meta-analysis on acupuncture for peripheral joint osteoarthritis by Kwon et al in 31 RCRs. They found that in 10 high quality-studies pain reduction in acupuncture groups was better than in control groups. In this meta-analysis, with similar data, it is documented that acupuncture reduces pain in patients with peripheral osteoarthritis (OA) and particularly in cases of knee OA .

In a study of Melcert et al on acupuncture for idiopathic headache, a Cochrane database systematic review with 1151 patients in 26 RCT found that:

There is evidence that acupuncture helps treat intermittent headaches.

PAIN MANAGEMENT IN EMERGENCY MEDICINE

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Prehospital analgesia for injured patients seems to be an unsolved problem for at least one – third of all trauma patients suffering from moderate or severe pain and especially for over 80% of trauma patients solely with extremity fractures.

Nowadays, it is well known that the untreated acute pain causes multiple physiological undesirable effects such as anxiety, immune dysfunction, cardiac dysrhythmias and cardiac ischemia. Many studies conclude that the prehospital Emergency Medical Services (EMS) all around the world do not provide effective analgesia at all, or they do not provide it in an appropriate manner.

Barriers for providing effective analgesia, e.g. administering opioids judiciously, by the EMS personnel are the potential suppression of the cardiovascular or respiratory system, as well as an alteration of the mental status in head injured patients. In addition, strong analgesics may impede physical (especially the abdominal) and neurological examination in the Emergency Medical Department (EMD). Furthermore, an intravenous access is necessary and the providers have to contact medical control before providing analgesia.

Others have shown, that injured patients often do not request analgesia, or that the providers either underestimate pain or they do not give the analgesics in appropriate doses. The available drugs for these patients are the opioids (morphine, fentanyl, nalbuphine) and non-opioids drugs such as ketamine or ketorolac.

In conclusion, many studies have documented that the non-physician EMS personnel needs direct education how to assess pain more effectively and new protocols for treatment need to be implemented. Nowadays, literature supports that it is safe to provide prehospital effective but judicious analgesia, especially with short-acting drugs like fentanyl, which furthermore are easily reversible. Finally, it is ethically unacceptable to allow patients to suffer needlessly from acute pain in the pre-hospital setting.

REFERENCES

1. Mc Lean S, Domeier R, De Vore H et al. The feasibility of pain assessment in the prehospital setting. Prehosp Emerg Care 2004; 8:155-61.
2. Yealy D. Prehospital pain research. Ann Emerg Med 1996; 27:471-3
3. Fullerton-Gleason L, Crandall C, Sklar D. Prehospital administration of morphine for isolated extremity fractures: a change in protocol reduces time to medication. Prehosp Emerg Care 2002; 6:411-6
4. Wedmore I, Johnson T, Czarnik J, et al: Pain management in the wilderness and operational setting. Emerg Med Clin North Am 2005; 23:585-601.
5. Alonso-Serra H, Wesley K. Prehospital pain management. Prehosp Emerg Care 2003;7:482-8.

BACK PAIN IN CHILDREN

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While back pain is perhaps the most common pain complaint of adults and all adults have had back pain at some time in their life, back pain is much rarer in children and may be the initial symptom of an underlying disease process. This is especially true in younger children.

If the child is 4 years old or younger or if a child of any age has back pain accompanied by:

- Fever or weight loss
- Weakness or numbness
- Trouble walking
- Pain that radiates down one or both legs
- Bowel or bladder problems.
- Pain that keeps the child from sleeping

further tests may be needed.

Disease Types

Mechanical problems, including musculoskeletal problems, an overuse injury, direct traumatic injury, or a ruptured disc.

Developmental abnormalities, including spondylolysis and spondylolisthesis.

Inflammatory and infectious diseases, including diskitis, vertebral osteomyelitis, juvenile rheumatoid arthritis.

Neoplastic disorders, including primary or metastatic

History

It is essential to take a careful history. This should incorporate:

- History of the pain:
- Neurological symptoms:
- Past medical history.
- Family history.
- Social history.

Examination:

- Localisation and evaluation of pain
- Tenderness (site of maximal tenderness)
- Inspection (to detect deformity, wasting, kyphosis and scoliosis)
- Gait
- Flexibility
- Neurological examination

Investigations

- X-rays:
- Bone Scans:
- Computed Tomography (CT) scan
- Magnetic Resonance Imaging (MRI):

Laboratory tests may include checking white and red blood cells (complete blood-cell count) and looking for system-wide inflammation (measuring erythrocyte sedimentation rate).

Treatment

Treatment may begin with simple analgesics (acetaminophen) given when the child complains of back pain. Non-steroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen also are key in treating pain in children with collagen vascular disorders such as juvenile rheumatoid arthritis. Pain of juvenile rheumatoid arthritis that fails to response to salicylates or NSAIDs may require additional therapy with other agents including hydroxy-chloroquinine, gold (oral or injectable), methotrexate, d-penicillamine or corticosteroids.

Although simple analgesics are effective in the majority of patients with back pain, additional therapies may be required in specific patients. For chronic disorders, the prolonged use of opioids is not recommended because of

the potential for dependency; however, patients with severe pain from back problems regardless of the etiology may require short-term use of oral opioids (codeine, hydrocodone, or oxycodone) or even intravenous opioids until a diagnosis is established and appropriate therapies initiated.

Prognosis

This is determined by the underlying diagnosis.

References

1. Afshani E, Kuhn JP; Common causes of low back pain in children.; Radiographics. 1991 Mar;11(2):269-91.
2. Bhatia NN, Chow G, Timon SJ, et al; Diagnostic modalities for the evaluation of pediatric back pain: a prospective study. J Pediatr Orthop. 2008 Mar;28(2):230-3
3. Feldman DS, Straight JJ, Badra MI, et al; Evaluation of an algorithmic approach to pediatric back pain. J Pediatr Orthop. 2006 May-Jun;26(3):353-355
4. Back pain in children. Orthop Clin North Am. 1999 Jul;30(3):467-74
5. Auerbach JD, Ahn J, Zgonis MH, et al; Streamlining the evaluation of low back pain in children. Clin Orthop Relat Res. 2008 Aug;466(8):1971-7. Epub 2008 Jun 16.
6. Shelton YA; Scoliosis and kyphosis in adolescents: diagnosis and management. Adolesc Med State Art Rev. 2007 May;18(1):121-39
7. Grattan-Smith PJ, Ryan MM, Procopis PG; Persistent or severe back pain and stiffness are ominous symptoms requiring prompt attention.; J Paediatr Child Health. 2000 Jun;36(3):208-12.
8. Curtis C, d'Hemecourt P; Diagnosis and management of back pain in adolescents. Adolesc Med State Art Rev. 2007 May;18(1):140-64
9. Prins Y, Crous L, Louw QA; A systematic review of posture and psychosocial factors as contributors to upper quadrant musculoskeletal pain in children and adolescents. Physiother Theory Pract. 2008 Jul-Aug;24(4):221-42
10. Feldman DS, Hedden DM, Wright JG. The use of bone scan to investigate back pain in children and adolescents. J Pediatr Ortho 2000;20:790-795.
11. Chriss A. Weak analgesics and non-steroidal anti-inflammatory agents in the management of children with acute pain. Pediatr Clin North Am 2000;47:527-544.
12. Hamalainen ML, Hoppu K, Valkeila E, et al. Ibuprofen or acetaminophen for the acute treatment of migraine in children: A double-blind, randomized, placebo-controlled, crossover study. Neurology 1997;48:103-107.

ACUTE PAIN SERVICE: HOW TO SET UP? PITFALLS? WHAT TO SCORE?

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More than a decade ago anesthesia departments started to pay more attention to the postoperative well-being of surgical patients. New methods were developed to limit postoperative pain, necessitating longer follow-up of the patient to prevent problems or complications. Postoperative care teams were established, with the goal to minimize pain in patients undergoing operations, but also to decrease or threat other side-effects of operations (e.g. headache, backache, nausea and vomiting). Some of those teams are nurse-based, physician-based or a combination of the two.

But just starting a postoperative pain team is not the hardest part in managing postoperative pain. All those involved in patient care have to be informed, instructed and trained about the new protocols. Managing postoperative pain is a process which need a broad introduction in the hospital to be successful. Commitment of the organization (nurses, physicians, trainees, management and Hospital Board of Directors) is essential to maintain good level of postoperative pain care. Several terms have to fulfilled: 1) (continuous) training of nurses on every ward; 2) uniform pain protocols for all patient wards because this enhance the possibility to exchange nurses between wards; 3) uniform scoring system (e.g. pain); 4) informing each surgeon of all surgical disciplines and their residents about the (updated) pain protocols because they often are responsible for the overall patient treatment; 5) the necessity of an uniform reporting system and database to allow to perform statistics; to increase the quality of care, to provide rescue protocols in case of problems; and to decrease errors; 6) contact with the nurses on the ward to know what problems did occur, maintaining involvement and coordinate extra training or workshops; 7) and commitment/involvement of all anesthesiologists so quality of pain care is guaranteed around the clock, seven days a week, guaranteeing supervision at all times.

Although most pain teams visit every postoperative patient to check postoperative pain scores, other evaluations are checked at the same time (e.g. side effects of epidural analgesia techniques, i.e. extent of sensory blockade or intensity of motor blockade). Other problems should also be detected, e.g. TNS, nerve lesion, wrong medication, disconnections and malfunction of pain infusion pumps. Patients on chronic pain medication need special attention because regular pain medication according to the protocols is often insufficient. Adjustment of pain medication should be possible on a daily basis.

Our patients undergoing surgery deserve better postoperative care. A well-organized hospital wide quality care system (plan-do-check-act quality cycle) is the best guarantee for a patient to relief pain and other disadvantages following an operation. Although this modern care system requires a more complex organization of the pain team, at the same time will prevent complications. The latter mean a huge cost for hospitals and are a burden for patient with potential devastating consequences. We have the tools to prevent them, if all involved support the acute pain service.

RAPID ONSET OPIOIDS FOR BREAKTHROUGH CANCER PAIN MANAGEMENT

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Between 40 and 80% of patients with advanced cancer experience breakthrough pain (BTP), a sudden, rapidly escalating flare of pain occurring against a background of otherwise well-controlled persistent pain.

Breakthrough pain can place significant physical, psychological and economic burden on both patients and their carers.

Treatment of BTP is important and involves the use of short-acting opioids to supplement the opioid regimen that controls background pain. However, the pharmacokinetic profile of these agents makes them not totally appropriate for BTP management, as they have a slow onset and long duration of action. [1]

A new class of opioid formulation -the rapid onset opioids- has been developed to fulfil the need for a non-parenteral drug with a pharmacokinetic profile to closely fit the temporal characteristics of a BTP episode (namely fast onset of action and short duration of action).[2]

The oral transmucosal routes of administration (buccal, sublingual) have been utilized in the management of BTP episodes.

A variety of commercial buccal, sublingual, nasal and pulmonary opioid preparations are currently under development.

Currently, there is one commercially available new oral transmucosal product in Europe (Abstral -Sublingual Fentanyl Citrate tablet).[3]

The new Abstral utilizes innovative technology to deliver the power of fentanyl in rapidly disintegrating muco-adhesive sublingual tablets.

Abstral is available as 100μg, 200μg, 300 μg, 400 μg, 600 μg, and 800μg tablets (the packs are colour-coded and the tablets have different shapes).

The patients are instructed to place the tablet under the tongue at the deepest part and allow to dissolve completely in the sublingual cavity, without chewing, sucking or swallowing.

Patients should be titrated to a recommended maximum dose of 800 μg per episode of pain.

Abstral is a rapid onset opioid (dissolves in seconds and acts in minutes)

Two long-term, Phase III, multi-centre studies, investigated the efficacy and safety of sublingual Fentanyl (SLF) in opioid tolerant cancer patients.[4]

SLF was associated with significantly greater improvements in pain intensity and pain relief, from as early as 10 minutes post administration.

Improvements in pain intensity were maintained throughout the 60-minute assessment period.

SLF was well tolerated, with serious adverse effects reflecting the underlying disease state.

References

1. Davies A,.et. al, The management of cancer related breakthrough pain. Recommendations of a task group of the Science Committee of the Association for Palliative Medicine of Great Britain and Ireland. Eur J Pain 2008,13:331-8
2. Lennernas B,. et. al, Pharmacokinetics and tolerability of different doses of fentanyl following sublingual administration of a rapidly dissolving tablet to cancer patients: a new approach to treatment of incident pain, Br J Clin Pharmacol. 2004 59:2 249-253
3. Bredenberg S, et. al, In vitro and in vivo evaluation of a new sublingual tablet system for rapid oromucosal absorption using fentanyl citrate as the active substance, Eur. J. of Pharmaceutical Sciences . 2003 , 20, 327 – 334
4. Rauck R., et al, Efficacy and tolerability of sublingual fentanyl in opioid – tolerant cancer patients with breakthrough pain: interim findings from two long – term, Phase III multi – centre studies, WIP Annual congress, New York, 13-16, March, 2009

FREE PAPERS

01 POSTOPERATIVE ANALGESIA AND COGNITIVE DYSFUNCTION IN THE ELDERLY AFTER ORTHOPAEDIC SURGERY

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Background and aims: The aim of this study was to examine the correlation between adequate postoperative analgesia and the incidence of POCD in the elderly after orthopaedic surgery.

Methods: 45 patients aged 75 ± 5 scheduled for orthopaedic surgery after hip fracture were randomly allocated in 2 groups. In the first group we performed a combined subarachnoid – epidural anaesthesia with ropivacaine 15 mg at $L_2 - L_3$ or $L_3 - L_4$ interspace and inserted an epidural catheter; using postoperatively a continuous epidural regimen with ropivacaine 0.2 % and fentanyl 1 μg/ ml in a dose of 7 mL hr^{-1} for 48 hours. In the second group we performed a subarachnoid anaesthesia with ropivacaine 15 mg and postoperatively patients were treated with tramadol hydrochloride 50 mg 4 times daily. In both groups we assessed pain with VAS scale for the first 48 postoperative hours at rest and at movement and the Mini Mental Test on admission, in the first and third postoperative day for early POCD.

Results: Preoperatively we compared the 2 groups with t-test for the grade of pain (p=0,615). Postoperatively there is a great statistical difference in the grade of pain between the 2 groups (p=0.001) mainly at the 6th hour (repeated measures ANOVA).

Cognitive Dysfunction (x2): There is a numerical difference between the 2 groups (epidural 3/19=15, 8%, iv route 5/17=29, 4%) but with no great statistical importance (p=0.326).

Conclusion: Continuous epidural analgesia is associated with more effective analgesia at rest and at movement, and seems to be correlated with lower POCD incidence.

02 CONTINUOUS FEMORAL NERVE BLOCK IN ORTHOPAEDIC PATIENTS. ANALYSIS OF OUTCOMES AND COMPLICATIONS

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Aims: To study the efficiency of postoperative analgesia and the complications of continuous femoral block after orthopaedic surgery.

Methods: This is a prospective study of 784 patients 214 males and 570 females, mean aged 68.10± 5.57yrs scheduled to undergo ortopaedic surgery. All patients had spinal anaesthesia. In the PACU unit a continuous femoral block was performed and the nerve was identified with a stimulator under aseptic contitions. A bolus dose of 20 ml of levobupivacaine 0.25 mg/ml was given, a catheter was introduced and a continuous infusion of 0.625 mg/ml at 4-5 ml started. The catheter was kept for 48 hours. As rescue analgesia we used PCA morphine. The VAS score (0-10) was estimated every 4 hrs postop. We studied the success rate of the catheter insertion, the incidence of early and late complications, the quality of analgesia and the patient satisfaction

Results: Identification of the femoral nerve and administration of the bolus dose was successful at a percent of 98, 7%. Inadvertent vascular injury by the needle occurred in 0.9%.Success rate of catheter insertion was 95.7%. Vascular injury with the catheter was 1.1%.Accidental removal of the catheter during fixation was 2.7%. Accidental removal of the catheter in the ward was 3.1%. No signs of local haematoma or infection were observed. Systemic complications from cardiac or central nervous system not occurred. There was one case of neuroapraxia completely resolved in 6 weeks time. The Mean VAS score (0-10) was 0,7 ± 0,3 .90% of the patients were very satisfied.

Conclusions: Continuous femoral nerve block is a method easy to perform, less invasive than a psoas compartment block or an epidural and provides effective postoperative analgesia for orthopaedic surgery with very few side effects.

03

POSTOPERATIVE ANALGESIA USING MORPHINE IN MAJOR UPPER AND LOWER ABDOMINAL SURGERY

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Aim: The aim of this study was to assess the analgesic efficacy and safety of epidural use of morphine, in patients undergoing major upper (UA) or lower abdominal (LA) surgery. Moreover to determine if upper abdominal surgery has different analgesic requirements than lower abdominal surgery in postoperative period.

Patients – Methods: Our study included 1412 patients UA (n=752) and LA (n=660) aged 58,9±received epidural morphine 2-5 mg per dose depended on the analgesic requirements after cancer surgery. The epidural dose was repeated until the quality of analgesia was very good or excellent. The pain relief was measured using the categorical scale, (0=no relief, 1=moderate, 2=satisfactory and 4=complete) and the amount of narcotic consumed was recorded. In the group, pain relief remained more than satisfactory throughout the 6 days follow-up period. The program used for statistical analysis was the SPSS 10.

Results: On the 1st day, the needed dose of morphine was 7,3±3,7 and 6,8±3,0, p=0,005, for upper and lower abdominal surgery respectively. The needed dose of morphine decreased day per day for both the type of surgery. The total dose of morphine was 23,2±12,2 and 20,0±10,3 p<0,001 for the different type of surgery.

Conclusion: After abdominal surgery, epidural morphine analgesia, can provide satisfactory postoperative pain relief. Epidural morphine administration was less in patients who undergoing lower abdominal surgery than upper abdominal surgery. This study suggests that the type of surgery is an important determinant in morphine requirements in abdominal surgery.

04

THE INFLUENCE OF AGE AND GENDER IN EPIDURAL MORPHINE FOR POSTOPERATIVE PAIN

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Aim: The purpose of this study was to investigate the efficacy and safety of epidural use of morphine, in the management of postoperative pain and the influence of age and gender in epidural morphine requirements.

Patients –Methods: One thousand six hundred forty five patients aged 58,9±13,7 (718 male and 927 female), received epidural morphine 2-5 mg per dose depended on the analgesic requirements after cancer surgery. The epidural dose was repeated until the quality of analgesia was very good or excellent. The pain relief was measured using the categorical scale, (0=no relief, 1=moderate, 2=satisfactory and 4=complete) and the side effects were recorded. In the group, pain relief remained more than satisfactory throughout the 6 days follow-up period. The program used for the introduction of coded data and statistical analysis was the SPSS 10.

Results: Men needed greater dose of morphine compared to women (25,5±15,3 vs 20,4±10,7, p<0,001). We found that total dose was correlated to age (-0,156) p<0,001. The frequency of side effects was very low in our patients. The incidence of vomiting was 2,4%, whereas the incidence of pruritus (2,9%), urine retension (0,1%), headach (0,1%) and respiratory depression (0,06%). No spinal haematoma occurred.

Conclusion: These results suggest that morphine dose for postoperative pain presents a negative correlation to age, while regarding the gender, men need statistically higher dose of morphine than women.

O5 SUPRASCAPULAR NERVE BLOCK FOR PAIN RELIEF OF FROZEN SHOULDER

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Aims: To assess the effectiveness of suprascapular nerve block to relieve pain, after passive manipulation of the shoulder under General Anaesthesia, for treatment of frozen shoulder.

Methods: In a prospective trial we randomized 27 patients, ASA I-III, aged 47-73yrs in two groups. All patients underwent manipulation of their shoulder under GA, with fentanyl 0.2μg/kg and propofol 2.5 mg/kg. They were premedicated with iv midazolam 0.02mg/kg. In group A (n=12) the suprascapular nerve block was performed at the end of the manipulation. In group B (n= 15) the block was performed 20-30 min before GA. The suprascapular nerve block was performed with the patient in the sitting position, and the nerve was identified with a stimulator. A bolus dose of 20 ml levobupivacaine 5mg/ml was administered. We assessed the pain score and the consumption of morphine in the two groups for the next 2 hours. There were no side effects.

Results: In group A, all patients had severe pain with VAS score 8-10, while mean morphine consumption was 12.3± 3.6 mg with poor pain relief. In group B patients had VAS score 2-5, and only two required morphine 4 mg for pain relief. The VAS score difference between the two groups was statistically significant as well as the morphine consumption (p<0.05)

Conclusion: This study demonstrates that preoperative suprascapular blockade provides significantly better postoperative analgesia probably due to the pre-emptive effect of the local anaesthetic, by attenuating the transmission of painful stimuli from the surgical site to the CNS.

O6 FUNCTIONAL GASTROINTESTINAL DISORDERS, CHRONIC PAIN, CHRONIC FATIGUE, AND THE POTENTIAL ROLE OF H. PYLORI

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Introduction: During a pilot study of functional dyspepsia we identified a high prevalence of headache, backache and chronic fatigue in these patients. We investigated the relationship between chronic fatigue, headache and backache and H. pylori infection in a sample of Greek patients.

Methods: Patients with functional dyspepsia (Rome III criteria), were evaluated for the presence of chronic pain and fatigue (according to CDC criteria) with the use of a structured questionnaire and performance of endoscopy with *H. pylori* testing. Organic disease was excluded through complete hematological, biochemical and endocrine testing. Associations between chronic pain symptoms, chronic fatigue and *H. pylori* presence were tested with univariate and multivariate analysis.

Results: 104 pts were evaluated [70/104 female (67.3%), mean age 47,5 ± 12,4 yrs). *H. pylori* was confirmed by biopsy in 70 pts (67.3%). Chronic headache was noted in 95/104 (91.3%) pts, backache in 53/104 (51%) pts and chronic fatigue in 87/104 (83.7%) pts [more frequent in women (p=0.048)]. Chronic fatigue correlated with chronic headache (OR 12.7, 95%CI: 2.7-60.8, P=0.002) but not with backache (OR 2, 95%CI: 0.7-5.9, P=0.28). The association between chronic fatigue and headache was more robust within H. pylori (+) patients (OR 9.3, 95%CI: 4.6-18.7, p<0.001). Eradication with a triple antibiotic combination resulted in symptom resolution in 83/104 (79.8%) of the patients.

Conclusions: Functional dyspepsia is a multi-systemic disorder with an increased prevalence of chronic fatigue that closely correlates with chronic headache especially in *H. pylori* positive subjects. Chronic pain symptoms improved with *H. pylori* eradication. These complex interactions between functional gastrointestinal disorders, chronic pain and fatigue, and the potential causal association with H. pylori need further investigation.

07 THE EFFECT OF DULOXETIN IN LOWER LIMB NEUROPATHIC PAIN IN DIABETIC PATIENTS

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Background and aims: It is well known that duloxetin alleviates symptoms of chronic pain conditions through inhibition of Noradrenaline and Serotonine reuptake, especially in diabetic patients. The objective of this study is to evaluate the effect of duloxetin administration for neuropathic pain in diabetic patients with established vasculopathy.

Methods: We studied 33 diabetic patients with peripheral vasculopathy, men and women, mean age 72 ± 6.2 years. Patients with a known history of depression or use of antidepressants, as well as patients with compromised renal or liver function were excluded from the study. The intensity of the lower limbs pain was evaluated by the visual analog scale (VAS). The neuropathic pain component was confirmed by history and physical examination. The patients' emotional state was evaluated with the Hamilton scale for depression. The patients were given duloxetin 60 mg po qd and pain intensity and characteristics were recorded daily for 10 days. The need for additional analgesic administration and probable side effects were also recorded.

Results: Upon initial examination, 63% of the patients complained of allodynia, 40% of hyperalgesia, 94% of numbness, and 88% of burning pain. All the patients reported worsening of symptoms at night, with frequent awakenings. The initial VAS score was 8 ± 1.3. 10 days later the pain intensity was 5 ± 1.5. 75% of the patients reported considerable improvement of the neuropathic pain symptoms, as well as better sleep quality. None of the patients suffered side effects related to duloxetin administration.

Conclusions: Duloxetin remarkably reduces the intensity and consequences of lower extremities neuropathic pain in diabetic patients with peripheral vasculopathy, and can be used safely within a multimodal analgesia plan.

08 TOLERANCE EFFECT TO PREGABALIN IN THE SUBPOPULATION OF FIBROMYALGIA

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Introduction: Pregabalin was the first drug to be officially endorsed for the treatment of fibromyalgia. Approval of pregabalin for this indication was based on 2 clinical trials that included 1,800 patients. Additionally, in a 6-month study the drug was proven to provide sustained relief of fibromyalgia pain and improved function. Tolerance to pregabalin (loss of therapeutic effect) has only been noted by few post marketing consumer reports.

Aim: To investigate the clinical characteristics of patients that developed tolerance to pregabalin.

Methods: Retrospective analysis. The sample included 114 patients that were diagnosed or were followed up in an outpatient basis and were receiving pregabalin for any indication.

Results: 2 out of 16 patients under pregabalin for fibromyalgia developed tolerance.The first case involved a 65 years old, hypertensive woman that was administered pregabalin in incremental doses up to 300mg/day at which she responded by >80%. The reduction of pain was sustained up to 4 months. The patient experienced exacerbation of her symptoms and the drug dosage was increased up to 600mg. Again, the patient responded but loss of therapeutic effect was noted 2 months later. The second case was a 47-year-old female patient with fibromyalgia and primary progressive multiple sclerosis. She was administered pregabalin up to 600mg daily in combination with duloxetine 60mg daily. The patient responded by >50% .Loss of therapeutic response was reported 3 months later.

Discussion – Conclusions: Development of tolerance to pregabalin needs to be re-evaluated, especially in the subpopulation of fibromyalgia. Results from postmarketing studies, are particularly useful.

09 OXYCODONE IN OBLITERATIVE ARTERIOPATHY PAIN OF LOWER LIMBS IN ELDERLY

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Backround: Main of this clinical observation was to evaluate efficacy and safety of oxycodone CR in treatment of ischemic pain in the elderly affected by CLI (Critical Limb Ischeaemia), considering the effectiveness of oxycodone controlled release (CR) in the treatment of neuropathic pain, and its use in elderly patients, to control moderate-severe pain.

Methods: We enrolled 25 patients aged 50-85, at III-IV stage of Leriche-Fontain classification. All patients were treated with oxycodone CR at starting dose of 20 mg/day. The dosage was then individualized with a titration up to a maximum daily dose of 40 mg/day, on the basis of pain intensity and severity of side effects. The pain was evaluated before the introduction of oxycodone CR: T0 (baseline) and at T1=3rd, T2=7th, T3=14th and T4=21st day using the Visual Analog Scale score in static and dynamic conditions. Adverse events and quality of sleep and patient's satisfaction were recorded.

Results: The study group, 25 patients (81% men and 19% women) with a mean age of 73,17 ±7,59 years. Daily dosage of oxycodone CR was changed at T2, increasing the dose in 87% of cases (n=20) and arriving at a dose of 15 mg in 5 patient and 20 mg in 15 patients. Increasing dosage, a statistically significant decrease ($p<0.001$) of VAS-score was registered, both in the static (VASs) and dynamic (VASd) component of pain. At T=0 mean scores were 7,8 ± 0,98 and 8,6 ±1,02, VASs and VASd respectively, and at T2 mean score was 4,38±1,01. Significant improvement in daily function, the quality of sleep, mood tone and social relations were noted. Two patients (8%) reported occurrence of adverse events.

Conclusion: The therapeutic approach with oxycodone CR has proven safe and effective in elderly patients with PAD, providing good analgesia in the short and long term, with a good safety profile.

10 DIFFERENTIAL DIAGNOSIS IN PAIN MEDICINE

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A critical point in pain medicine, with which it confronts us every day is the difference between these two aspects, "*differential diagnosis*" and "*etiopathogenesis*" which differ formally, but it seems to us, also essentially. It seems to make a differential diagnosis, choose inductive process condition responsive to the most objective data of a patient, would also determine genesis of pain disorder. However, in pain medicine, most often, this is not possible. The lack of standardized methods, of so-called "clinical problem solving" in pain therapy, clashes with a growing diagnostic imaging or neuro-physiological technology, which tends to see much, or all, even the smallest pathogens motives, but that often leads to complete blindness of clinical reasoning. The process of differential diagnosis in pain therapy, needs to be methodologically defined. For example, it must provide a comprehensive response to a patient with headaches. You may be faced, in descending order of severity, to a brain tumor, a sinusitis, an eye disease, a cervicalgia or a primitive migraine. Differential method suggests a standard procedure with the collection anamnestically, followed by clinical examination, finally, the study by images. At the end of this inductive process can, in the example, obtain evidence of a brain tumor, which explains the pain, but it remains unclear in its pathogenesis, even in the painful process that has highlighted. In the proposed case, although the inductive method leads to differential diagnosis is that the identification of the cause of disease, they use information and data completely different. The first examines the patient and clinical outcomes and requires a choice, an assumption that involves a group of "*thinking*" and "*exclusionary*", the second requires scientific support that the specific elements found causal links between environmental and / or genetic determinants of occurrence of condition, involving a group of "*obvious*" and "*including*".

11 ANALGESIC EFFECT EXERTED BY EXPOSURE OF WISTAR RATS TO THE NMR SPECTRUM OF MORPHINE

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Findings of our group suggested that emission of the NMR spectra of biologically active substances to cells and organism targets exert the same effect on them as the administration of the substance itself. In the present study the analgesic effect of the NMR spectrum of morphine emitted to Wistar rats, was tested by the tail flick test.

Five Wistar rats (250-275 gr) were tested by the tail flick test before (control) and 30 min and 60 min after intraperitoneal administration of 10mgr/kg b.w. of morphine and reaction time was recorded. 24 hours later the rats were exposed for 5 hours to the NMR spectrum of morphine and tail flick test was recorded before, 30 min and 60 min after exposure. The same exposure was performed to the rats after exposure to a randomly selected electromagnetic spectrum for 5 hours. Administration of morphine resulted in a significant prolongation of the reaction time to the tail flick test. A significant prolongation was also recorded after exposure of rats to the NMR spectrum of morphine, whereas the exposure to randomly selected spectra produced no effects. The latter indicates a specific effect of the NMR spectrum of morphine.

Results indicate that the Nuclear Magnetic Resonance spectrum of morphine conserves the "biological information" of the substance which probably leads to the activation of μ receptors of Wistar rats.

12 SELECTIVE BLOCKAGE OF NOCICEPTIVE AFFERENTS DOES NOT REDUCE NEUROPATHIC PAIN IN RATS

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Background and Objective: Neuropathic pain is clinically common and difficult to treat, largely due to a lack of fundamental understanding of its neural mechanisms. It is not clear if nociceptive inputs contribute to neuropathic pain. With the recent discovery of selective inhibition of nociceptors by TRPV1-mediated entry of impermeant sodium channel blockers (Binshtok et al. Nature 2007; Gerner et al. Anesthesiology 2008), it is possible to test the ***hypothesis that neuropathic pain is not mediated by nociceptive afferents.*** Nociceptor neurons are unique in expressing high threshold transducer channels including the TRPV1 receptor which forms ion channels activated by noxious heat and capsaicin. The open pore of activated TRPV1 is suggested to be large enough to allow pass of QX-314, a positively charged derivative of Lidocaine that has no effect on sodium channels when applied extracellularly but does block sodium channels when applied intracellularly. The objective of this study is to determine if entry of QX-314 into nociceptive neurons expressing TRPV1 reduce neuropathic pain in the rat.

Methods: Chronic constriction injury (CCI) model was used to induce neuropathic pain. The right sciatic nerve of Sprague Dawley rat was ligated and an intrathecal catheter was implanted at the lumbar region through the cisterna magna and connected to an Alzet osmotic pump implanted subcutaneously in the back region. Hyperalgesia and allodynia reliably developed between day 2 to day 8 after surgery. Four groups of rats received vehicle, Capsaicin (0.5 mg/ml), QX-314 (0.2%), or a combination of Capsaicin and QX-314 via the catheters and pump. The Hargreaves test and van Frey test were performed to evaluate the thresholds of withdrawal response to heat and mechanical stimuli applied to each hind paw before and after surgery and drug administration. In addition, behavioral observations were made for detection of abnormal motor function.

Results: Compared to the control, the combination of QX-314 with Capsaicin applied intrathecally did not increase the withdrawal thresholds to thermal or mechanical stimulation to the paw ipsilateral to the sciatic nerve ligation. Interestingly, QX-314 alone or in combination with capsaicin reduced the withdrawal thresholds to mechanical stimulation to the controlateral paws. Additionally, QX-314 induced abnormal motor behaviors such as restless, vocalization, running, circling, rolling, and jumping.

Conclusions: Selective blockage of nociceptive afferents by capsaicin-mediated intracellular application of QX-314 did not reduced neuropathic pain in the CCI model in rats. These data suggest that neuropathic pain is not mediated by nociceptive afferent input. The data further showed that QX-314 induced abnormal motor behavior, indicating that QX-314 is neurotoxic when applied intrathecally.

13 ROPIVACAINE DOWNREGULATES NEUTRAL ENDOPEPTIDASE (NEP) AND INDUCES ZINC INHIBITED APOPTOSIS ON HaCaT CELLS

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Ropivacaine, an amide-type local anesthetic, inhibits proliferation and induces apoptosis in HaCaT cells. Neutral endopeptidase (NEP), a Zn-dependent metallopeptidase, degrades endogenous opioids whereas its over-expression results in growth inhibition and induction of apoptosis in certain cancer cells. Zinc (Zn) is an essential element participating in gene transcription, cell division, development and differentiation as well as apoptosis inhibition caused by various toxic factors.

Aim of the present study is to investigate Zn effects on ropivacaine and NEP-mediated apoptosis in relation to ropivacaine effects on NEP expression, in human skin keratinocytes (HaCaT).

Methods: HaCaT cells were transfected with plasmids currying the *neo*-resistant gene or the NEPcDNA via the polybrene-DMSO method. Non-tranfected (HaCaT) and transfected (HaCaTneo and HaCaTNEP) cells were cultured in serum free growth medium and treated with ropivacaine (0-5 mM), with the addition of 15 μM Zn ($Zn(NO_3)_2$), for 48 hrs. Cell counting and the Trypan Blue exclusion assay for cell proliferation and viability estimation, DNA isolation and electrophoresis for apoptosis estimation and western blot analysis for protein expression, were applied.

Results: Cell growth and viability reduction as well as apoptosis induction by ropivacaine (0.5 and 1 mM), was inhibited by Zn (15 μM). Ropivacaine (1-5 mM) downregulated NEP. NEP's overexpression induced apoptosis, enhanced by ropivacaine and not inhibited by Zn (15 μM).

Conclusions: Ropivacaine's analgesic effects may be attributed to NEP's downregulation. Zn may protect against toxic effects of exogenous or endogenous factors involved in pain pathways.

14 SUCCESSFUL TREATMENT OF CHARCOT-MARIE-TOOTH CHRONIC PAIN UTILIZING SPINAL CORD STIMULATION: A CASE-STUDY

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Introduction: Charcot-Marie-Tooth (CMT) Disease is one of the most common hereditary neuropathies affecting 1 in every 2,500 people in the U.S. CMT is associated with moderate to severe chronic extremity pain. We present the case of a young male with CMT disease associated with chronic intractable lower extremity pain amenable to all other treatments.

Methods: This IRB-approved study highlights the case of a 37 year old male diagnosed with CMT pain of more than 20 years. He underwent a successful SCS trial using dual Quattrode® percutaneous leads (St. Jude Medical Neuromodulation Division, Plano, TX). A permanent implantation was performed with percutaneous leads and a conventional IPG (Genesis®; St. Jude Medical Neuromodulation Division, Plano, TX). Patient pain and quality of life was assessed 1- and 6-months after implant using the SF-McGill, VAS, Oswestry, Pain Disability Index, and SF-36. Baseline measures were obtained retrospectively by asking the patient to recall events prior to implantation. Qualitative data was collected from the patient's medical record.

Results: At 1- and 6-months post-implant, all outcome measures of pain and quality of life were positively impacted by SCS treatment. Medication consumption was reduced from 7 prescriptions to 1. In addition, the patient reports 80-90% effectiveness of SCS, "incredible change in lifestyle, being more active and enjoying life," better quality of life and 100% satisfaction with SCS. The physician reports improvement in spasticity and improvements with restless leg syndrome.

Conclusion: SCS may be treatment option for chronic pain associated with CMT disease.

Acknowledgements: This work was supported by St. Jude Medical Neuromodulation through a sponsored clinical research study.

15 TARLOV CYSTS AS A CAUSE OF SEVERE LOW BACK PAIN:A CASE REPORT

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Tarlov cysts or perineural cysts are lesions of the nerve roots located at the sacral level. Their etiology is unclear and they are usually asymptomatic; very seldom they cause severe low back pain or symptoms of radiculitis.

We report on the case of a 62-year old woman who came to our pain center suffering from severe pain in the sacral area for the past five years, being free of any other severe disease. Her pain was aggravated when sitting or standing for a long time and relieved by lying down. The x-rays and the CT-scan didn't show any findings correlated with her symptoms. The MRI showed perineural cysts at the S2 level and a small erosion of the sacral bone around the cysts. We tried to relieve her pain by oral treatment with NSAIDs, weak opioids, antidepressants , antiepileptics and by administering epidurally steroids. Treatment failure led us to recommend surgery. She had the cysts opened and partially cut and the erosion of the sacral bone filled with methylacrylate. Her symptoms disappeared immediately.

Six months later she doesn't feel any pain at the area of the sacral bone or anywhere else and the MRI shows no relapse of the cysts.

CONCLUSION: Symptomatic Tarlov cysts are very rare but they should be included into differential diagnosis of severe long lasting or intractable low back pain. Although the conservative therapy can sometimes help, the surgical treatment may offer excellent results.

16 THE USE OF LOCALLY APPLIED PULSED RADIOFREQUENCY ON THE SUPERIOR POSTERIOR ILIAC SPINE

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Background: Patients presenting pain in the buttock, radiating into the thigh, with no signs of vertebral origin on physical examination sometimes demonstrate a painful Superior Posterior Iliac Spine (SPIS) on palpation. Treatment of these SPIS by blocking individual spinal nerves is often unrewarding.

Aim: Evaluating the use of Pulsed Radiofrequency (PRF) locally on this painful Spine .

Method: In 29 consecutive patients (July 2008-February 2009) presenting only a painful spina PRF treatments were performed at sites that were recognized by the patient at touching the periost with the needle.

Excluded were patients with pain elsewhere or who were unable to communicate in Dutch.

In each patient the painful spot was identified as described above and treated with PRF, for 120s, 2Hz, 20ms, 50V (SMK needle, Cotop, Amsterdam. Radionics 3Cplus generator (radionics, Burlington, Mass).

After this initial treatment the next most painful spot on the spina was sought on a small distance (5-10mm) cranially, laterally, caudally and medially of the originally spot. This painful area was then treated in the same way. This was repeated until no painful spot was found with a maximum of six times

Results: Follow up ranged from 3 to 8 months, results were classified as: good, intermediate, or no clinical effect (decline in VRS: >70%, 69-31%, <30%). 58.6 % of the patients reported good results. 27.6% reported a intermediate effect and 10.3 % reported a minor or no effect

Conclusion: The use of PRF on the SPIS seems useful.

POSTERS PRESENTATIONS

P1 TRAMADOL VS PARACETAMOL. ANALGESIC EFFECT AND DISCHARGE TIME IN ONE DAY CASES IN CHILDREN

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Background: Postoperative pain management in one day cases in children is very important because it also contributes to their early dischargement. We studied the analgesic effect of tramadol in comparison to paracetamol in children undergoing surgery of small duration (35±5 min) and severity.

Method-Material: After written informed consent patients were randomized in 2 groups. Group T (tramadol N=98) and Group P (paracetamol N=100). Patients were ASA I-II, aged 10.5±4.5 years, weighted 29±10 kg. Anaesthesia was induced with propofol 3 mg/kg, fentanyl 3 μg/kg, rocuronium 0.8 mg/kg. Intubation took place with laryngeal mask. For maintenance, remifentanil 0.1 μg/kg/min and propofol 10 mg/kg were given. Ondasetron 0.1 mg/kg and dexamethasone 0.2 mg/kg were administered to prevent vomiting.

Just before the end of the operation Group T received bolus intravenously tramadol 2 mg/kg and Group P, paracetamol 15 mg/kg. There was wound infiltration with ropivacaine 2 mg/kg. Data collection included patient demographics, pain evaluation with a 4 scale pain score (1= no pain, 2 =mild pain, 3=moderate pain, 4=severe pain). Discharge time was divided in 3 groups (A= less than 3 hours, B=3-5h, C=5-6h). We also asked for side effects. Statistical analysis was performed with Student's t-test (P value < 0.05 statistically significant).

Results: 72% from Group P were discharged in less than 3 hours and only 27.8% from Group T. 40.8% from Group T left hospital between 3-5h and the rest 30% between 5-6h. As far as the pain scores, 91.8% from Group T had no pain and 8.2% mild pain. In Group P 61.9% had mild pain and 38.1 moderate pain. No patient referred side effects. There was statistically significant difference.

Conclusion: Paracetamol had more limited discharge time from one day clinic but it was not as effective as tramadol for postoperative pain control. Patients with tramadol had better pain scores without side effects but their stay was prolonged due to a light sedation.

P2 COMPARISON OF TRAMADOL AND NALBUPHINE FOR POSTOPERATIVE PAIN MANAGEMENT IN CHILDREN

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Backround: Tramadol seems to be very promising and effective for post operative analgesia in children undergoing surgery of intermediate severity and duration. We compared its analgesic effect with nalbuphine, a well tolerated and effective opioid.

Method-Material: After written informed consent patients were randomized in 2 groups. Group A (nalbuphine N=102) and group B (tramadol N=103). Patients were ASA I-II, aged 9±3 years, weigth 35±15 kg. The duration of surgery was 105±45 min. Anaesthesia was induced to all patients with propofol 3 mg/kg, fentanyl 5 μg/kg, rocuronium 1 mg/kg. Ondasetron 0.1 mg/kg and dexamethasone 0.2 mg/kg were given to prevent vomiting and nausea (with a second dose 8 hours later). For maintenance we used continuous infusion of propofol 10 mg/kg and remifentanil 0.5 μg/kg/min. Nabrufen 7-10 mg/kg was administered from rectum.

Group A received nalbuphine 0,2 mg/kg at the end of the operation and every 6 hours at the ward. Group B received tramadol 1,5 mg/kg at the same hours.

Data collection included patient demographics and the presence of side effects (urine retention, dizziness, headaches, pruritus, nausea/vomiting). Pain evaluation was estimated with a 4 scale pain score (1: no pain, 2:mild, 3: moderate 4: severe pain) by a doctor not involved in the intraoperative period. Statistical analysis was performed with Student's t-test, P value < 0,05 statistically significant.

Results: Group A: 96.08% referred no pain (scale 1) and 3.92% mild pain (scale 2). Group B : 97.07% no pain and 2.91% mild pain, with no statistically significant difference. No side effects in both groups were identified.

Conclusion: Both tramadol and nalbuphine had adequate analgesic effect in children undergoing surgery of intermediate duration and severity with no side effects.

P3 PROSPECTIVE EXAMINATION TO RELATIONSHIP OF PCEA USE AND PSYCHOLOGICAL VARIABLES IN PATIENTS UNDERGOING MAJOR ABDOMINAL SURGERY

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Background: There is a significant variation in postoperative pain experience and analgesic requirements of patients following identical surgical procedures and this variation has been related to a variety of psychological factors[1]. Furthermore, epidural analgesia has gained increasing popularity on the basis of its excellent ability to control postoperative pain[2].

Aims: The present study examined the relationship between psychological variables, including anxiety, depression, and PCEA use, in patients who underwent major abdominal surgery.

Methods: The Institutional Ethics Committee approved the research project and written informed consent was obtained from each participating patient. Finally, 54 consecutive male patients with colon cancer scheduled for open resection were included in the present study. The patients were asked to complete the Beck Anxiety Inventory (BAI) and the Beck Depression Inventory (BDI).

In the recovery room, a PCEA pump with fentanyl and ropivacaine was connected. The postoperative ratings of pain intensity (VAS 0-100), total fentanyl consumption, dose/demand ratio and satisfaction with PCEA were recorded during the first 72h postoperatively. Spearman correlation test was used to determine the relationship between the BAI and BDI scores and the other variables.

Results: The correlation between preoperative anxiety and depression was found to be significant. The total analgesic consumption and dose/demand ratio were significantly related to preoperative anxiety and depression.

Correlation between analgesic usage, satisfaction and preoperative anxiety and depression (Table) (Spearman's correlation coefficient).

	Pain intensity	Total opioid consumption	Dose/demand ratio	Satisfaction PCEA
Preop. BAI	0.21	0.65*	-0.28*	-0.89
Preop. BDI	0.28	0.46*	-0.22*	-0.53

*p<0.01

Conclusions: Preoperative anxiety and depression status influences the analgesic consumption in patients undergoing colorectal surgery treated by the PCEA method.

1. Taenzer P, et al. Pain 1986: 24: 331–342.
2. Liu SS, et al. Anesth Analg. 2007 Mar;104(3):689-702

P4 MULTIMODAL APPROACH FOR PAIN MANAGEMENT AFTER LOWER LIMB AMPUTATION. SUCCESSFUL COMBINATION OF CONTINUOUS FEMORAL BLOCKADE AND PARECOXIB

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Background: Phantom pain may occur in up to 85% of patients after limb amputation. Phantom sensation is a sensory and painful perception of the missing limb. Although its pathophysiology is not well understood it seems to be produced by a complex multifactorial interaction between sympathetic, peripheral and central nervous system. Appropriate aggressive pain management is required immediately in an an attempt to avoid chronic PLP.

Management of phantom limb pain may be both medical and surgical.

Patient **History:** Male patient 38 years old Asian proceeded for left upper knee amputation after car accident. He did not suffer any other injuries, without any other known medical problems. He did not take any medication and

had normal preoperative tests and clinical control.

Method: The operation took place under G.A. Anaesthesia was induced with propofol 2 mg/kg, midazolam , cis-atracurium and fentanyl. For maintainance we used sevoflurane 1,5%. Ondasetron 4 mg and cefuroxim 1,5 g were also given. Parecoxib 40 mg was administered 20 minutes before the end of the operation . A continuous femoral block was performed after the aweakness at the recovery room. We used a Stimpod Xavant Technology NMS 400 neurostimulator (1,5 m A, 2 Hz) and a Portex set with continuous femoral catheter and a 50mm needle. A single shot of ropivacaine 0,75% 10 ml was administered through the catheter and then a pump with 200 ml of ropivacaine 0,2% was connected with a rate of 7 ml/h.

Results: At the ward his general condition was estimated every 2 hours. Haemodynamic parameters were stable (B.P. H.R. Sp02). Phantom symptoms started between 4-8 hours after the amputation. The right position of the femoral catheter was confirmed again with the neurostimulator. The pump was setted at an icreased rate of 12 ml/h and parecoxib 40 mg were given intravenously every 12 hours for the first 48 postoperative hours. After 12 hours pain and phantom sensation were significantly reduced (VAS score) and after the first 24 hours pain was located at the wound without any other symptoms.

Conclusion: Our patient did not needed any opioids as rescue dose. Side effects from parecoxib or the femoral block were not referred. Phantom limb pain seemed to be eliminated with the combined administration of intravenous parecoxib and continuous femoral block without any other medical and pharmacological intervention (tricyclic antidepressants, anticonvulsants, opioids).

P5 EPIDURAL INFUSION OF ROPIVACAINE FOR POSTOPERATIVE ANALGESIA IN CANCER PATIENTS

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Aim. This study was undertaken to evaluate the effectiveness and safety of ropivacaine 0,2% (5ml/h), used for epidural infusion for postoperative period.

Methods. The parameters of hemodynamics and the consumption of the agent were explored in 272 patients ASA II-III, 161 male and 111 female, aged 61,9±12,3, operated for cancer surgery. The mean time of operation was 186,6±71,16 minutes.

After the arrival in ICU a bolus dose of ropivacaine 0,2% (5ml) was given and the infusion at a rate 5ml/h was started. The visual analogue scale was used for the assessment of analgesic effect in 0, 30 minutes, 2, 4, 6, 8, 10 and 21 hours at rest(VAS-R) and during voluntary coughing(VAS-C). If they had pain morphine or NSAID was administrated, according to the doctor's opinion.

Results: One hundred forty nine (54,8%) patients developed block. From them 18, 63, 68 developed motor, sensor or both blocks, respectively. In these patients the dose of ropivacaine was decreasing and they received 98,0±36,1mg compared with 112,6 ± 17,2mg, that the patients who didn't develop the block received (p<0,001).

One hundred twenty three of them who received the standard dose tolerated well (reduction of VAS-R from 3,6±2,4 to 0,9±1,6, p<0,001) and (VAS-C from 5,7±2,4 to VAS-C 2,1± 2,1 p<0,001).

Conclusion: Epidural infusion of ropivacaine may be regarded as an effective and safe component of analgesia in elderly patients. In most cases it was necessary to decrease the dose and administrate morphine or NSAID.

P6 COMPARISON OF TRAMADOL 50MG AND LIDOCAINE 20MG AS LOCAL ANESTHETICS BEFORE INSULATED NEEDLE INSERTION IN AXILLARY BLOCKS

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Background: Tramadol has been found to have local anesthetic properties.

Aim: We compared the onset time and analgesia quality of lidocaine and tramadol before insertion of an insulated needle for brachial plexus blocks.

Methods: 80, ASA I–III patients undergoing hand surgery. Patients were assigned into 2 groups of 40 subjects, receiving either lidocaine 20 mg (group L), or tramadol 50 mg (group T). Local anaesthesia was performed by subcutaneous injection (s/c), with 2 ml of any drug formulation, using a 27 Gauge needle. According to a waiting period of either 15, 30 or 60 seconds between s/c injection of each drug and insertion of a 21 G insulated needle, the pain sensation was measured and scored with the visual analog scale at the moment of s/c injection and at the time of the insulated needle insertion. Side effects were documented. T-test was used for statistical analysis.

Results: No significant difference was observed between groups L and T. At the s/c injection time, among the L and T groups, 11 and 6 patients respectively complained of moderate pain (VAS>4). Pain scores decreased with time: the mean values were 7 ± 1.5, 5 ± 1 and 1 ± 0.5 in L and T groups after 15, 30 and 60 sec respectively. Seven edema were noted around the site of puncture in the lidocaine and three in the tramadol groups. No further side effects were noted.

Conclusion: Subcutaneous injection of tramadol had similar anesthetic effect and quality of anesthesia like lidocaine.

P7 COMPARISON OF INTRAVENOUS TRAMADOL - METOCLOPRAMIDE AND TRAMADOL - ONDANSETRON IN THE RELIEF OF POSTOPERATIVE PAIN IN SURGICAL DENTISTRY

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Background: Tramadol is a racemic mixture. R-isomer has activity at the μ receptor and S-isomer inhibits norepinephrine and 5-HT uptake.

Aim: To compare the efficacy and safety of intravenous Tramadol-Metoclopramide and Tramadol-Ondansetron in the postoperative pain relief in a clinical setting.

Methods: A double-blind randomized trial involving 43 patients undergoing surgical removal of a single mandibular third molar. Those who developed moderate pain within 4h of the procedure were allocated to : i.v.Tramadol 50mg-Metoclopramide 10mg (Group TM, n=14), i.v.Tramadol 50mg-Ondansetron 8mg (Group TO, n=17), or placebo (Group PL, n=12). Participants monitored pain intensity for 24h using visual analogue scales. Paracetamol 600mg intravenously was used as the rescue analgesic. Statistical analysis was based on the intention-to-treat analysis.

Results: No significant difference was demonstrated between Groups TM and TO. Both groups were significantly better compared with placebo, over the 0-24h period. Rescue analgesia was required by only 1 out of 14 subjects in Group TM, 3 out of 17 subjects in Group TO and 10 out of 12 in Group PL. The median times to use of rescue medication were 21h (Group TM-VAS=2), 19h (Group TO-VAS=3) and 3h (Group PL-VAS=7). There were no important adverse events.

Conclusions: Tramadol is effective treatment for acute pain using a dental pain model and is well tolerated. TO have a shorter duration of action, but gave adequate analgesia in comparison with TM. Patients in Group TO needed more rescue analgesia than Group TM.

P8 REVISION SURGERY FOR LUMBAR SPINE DEGENERATIVE DISEASE: THE ROLE OF NEUROSTIMULATION

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Backround: Persisting or reappearing pain is a rather frequent problem after lumbar spine surgery for non-traumatic reasons. Failed back surgery syndrome (FBSS) is defined as persistent or recurrent pain, mainly in the lower back and/or legs, even after previous anatomically successful spinal surgery.

Aim: This study aims to present the magnitude of revision problem in lumbar spine surgery in cases suffer from degenerative disease, as well as the modern methods of it's treatment.

Material and Method: 100 lumbar spine operations were conducted in Neurosurgical Department of our hospital during last 6 months due to non-traumatic diseases. 27 of them were revisions. 15 cases revised once, 4 twice, and 1 four times. Revision causes were: 1) wrong level localization, 2) material failure, 3) technical errors, 4) postoperative instability, 5) incomplete decompression of neural elements, 6) postoperative spinal meningocele, 7) adhesions and 8) FBSS. Two of our cases revised once due to multiple causes (material failure, technical error and destabilization of supernatant level). Follow up was conducted at 1st and 3rd postoperative month.

Results: The results of lumbar spine revision surgery were excellent in cases where there was clear preoperative diagnosis of failure cause. Modern methods of Functional Neurosurgery (epidural and subcutaneous neurostimulators) were used to treat FBSS with satisfactory results. Spinal cord stimulation provides a sustained, long-term, 50% reduction in pain in over 60% of patients and allows concomitant pain medication to be reduced.

Conclusions: Revision of lumbar spine surgery is a rather frequent event in Spine Neurosurgical Departments. The majority of these cases had clear aetiology and thus excellent revision results. Nowadays Functional Neurosurgery offers treating solutions for remaining cases with substantial improvements in quality of life and functional status.

P9 PNB FOR FANTOM LIMB PAIN.PRESENTATION OF TWO CASES

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Background: Two patients with mutilation of limbs due to cancer and phantom limb pain presented to our chronic pain management office. At the time of presenting they had VAS 8/10, sleep disturbances and they were suffering. We started the treatment with combination of pregabaline, progressive increase up to 600mg/day, SNRI and 25μg/h transdermal fentanyl.

Materials and methods: One month later both of the patients had improvement in VAS scale, 5/10, and in time and quality of sleep. Their mood was also improved. The main remaining problem, was a spontaneous crumb which lasted for 2 to 3 minutes, five to six times per day. We decided to go on performing peripheral nerve blocks aiming the re-modulation of pain. Patient A had mutilation of the right arm in the middle of the elbow and patient B had mutilation of the left leg above the knee. Using neurostimulator, 50mm needle and guided by the patient about movement of the missing fingers we performed three intra-scalene blockades two weeks intervals for patient A. Following the same procedure with a 100mm needle we performed three blockades to the sciatic nerve for patient B.

Results: One month after completing the blockades VAS was 3/10 and patient's satisfaction was increased. Combination of pharmacotherapy and invasive technique as neural blockade proved to be quite effective for our patients.

P10

TREATMENT OF CHRONIC HEADACHE WITH ACUPUNCTURE PROTOCOL. COMPARISON WITH THE RESULTS OF INTERNATIONAL LITERATURE.

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Introduction: Chronic headache is a serious health problem and one a frequent syndrome of chronic pain.

Aim: Objective of this study was to evaluate the efficacy of Traditional Chinese Medicine Acupuncture Protocol (TCM) for treatment of chronic headache. Also to compare the results with the ones of international literature. Patients were treated at P.M.R. department of G.Gennimatas Hospital during 2008.

Methods: TCM Acupuncture Protocol applied to16 patients suffering from chronic headache. Duration of headache was 6,88±4,16 years, and mean age was 38,87±5,29 years. Among them 62,5% had symptoms of Tension Headache and 37,5% had Migraine. TCM Protocol applied from a Rehabilitation specialist. To each patient therapy was given twice a week and the duration was about 12-15 sessions in general.

Results: Results estimated from VAS and questionnaire of incidence of pain episodes per week, using t-test. SPSS 8 was used for the statistical analysis. Measures were taken at the baseline, competent of treatment, and at one, tree and six months after it. Effectiveness of the therapy had shown statistically significant benefits of acupuncture treatment at 81,2% of patients, considering the number of headache days and pain intensity, ($p<0.01$). Results which achieved due to the protocol mentioned above are comparable to those mentioned in international literature.

Conclusion: Acupuncture given from specialist can be effective for diminish the tendency and frequency of Chronic headache pain. Positive effects of acupuncture were similar to those obtained in international scientific documentation.

P11 MISPERCEPTION AND INADEQUATE PAIN MANAGEMENT IN CANCER PATIENTS

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Cancer pain is a complex, multifaceted problem that may originate directly from the tumor and its manifestations or indi-rectly from diagnostic and therapeutic proce-dures. Other factors as psychosocial, spiritual and existential issues influence the nature of pain experience. Pain remains a highly prevalent problem for patients with cancer; current esti-mates suggest that around half of the cancer patients experience pain during the disease trajectory and three quarters in patients with advanced disease

Unfortunately, despite the mounting knowledge about pain and the availability of effective pharmacology and other therapeutic modalities, pain remains pervasive and significantly mal-treated. Reports of under treatment of cancer pain persist in various clinical settings and are currently recognized as a significant health-care problem, causing unnecessary and unjustified suffering

WHO analgesic ladder serves as the mainstay model of treatment for the relief of cancer pain and appropriate utilizing of opioid drugs remains the cornerstone of adequate pain relief

Yet, substantial practice variability exists among clinicians who treat cancer patients in pain, and despite the availability of wide array of therapeutic options, pain remains frequently under treated.

Among the most important barriers to effective cancer pain management are clinician-specific factors, such as insufficient knowledge of pain mechanisms and treatments, poor assessment practices, and, often, excessive concerns about physical dependence, patient tolerance, psychological addiction, and side effects. Other factors related to the patient himself, family and health care system may as well interfere with an appropriate approach to pain management. Accordingly, the persistent under treatment of cancer pain leads to significant declines in function and quality of life.

In this brief presentation, we discuss the different analgesic treatment modalities, appropriate pain assessment and the current available effective opioid utilization. Methods to overcome the barriers to pain management in cancer patients as well are reviewed.

P12 MANAGEMENT OF NEUROPATHIC CANCER PAIN: OUR CLINICAL EXPERIENCE.

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Background: Neuropathic cancer pain presents a common problem in cancer, with more than one third of cancer patients experiencing such pain. Poor understanding of the pathophysiology results in problematic diagnosis and poor management. Many physicians are still not aware of its existence, nor of the different pharmaceutical modalities necessary to provide relief for this type of pain. As a result, opioid dosages are continuously increased, often with poor outcome and increased side effects.

Aim: To show that, for the management of neuropathic cancer pain, the addition of adjuvants, according to WHO guidelines, may provide significant pain relief and reduce the need for unnecessary escalation of opioid dose.

Methods: In the past 2 years, we treated 1183 new cancer patients who we divided into three categories regarding neuropathic pain: "unlikely, possible, and definite". Diagnosis was based on word descriptors, physical examination and the validated greek version of DN4. From the 333 patients found to have definite neuropathic pain, 298 were already on opioids (morphine, fentanyl and codeine, alone or in combination) and a NSAID, without substantial pain relief. To these patients we added an adjuvant (pregabalin with or without duloxetine, and methylprednisolone).

Results: Response rate (decrease in pain intensity of at least 30% in VAS compared to baseline) was 88%, without need for significant increase in opioid dosages.

Conclusion: In summary, physicians working with cancer patients need to be informed on the possible existence of a neuropathic component in cancer pain. The use of adjuvants, in combination with opioids, may provide significant pain relief in cancer patients, minimizing the need for increases in opioid dosages and reducing opioid-induced adverse effects and tolerance.

P13 THE USE OF DN4 QUESTIONNAIRE FOR THE DIAGNOSIS OF NEUROPATHIC CANCER PAIN

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Background: Diagnosis of neuropathic cancer pain remains a controversial issue for many reasons, including the dynamic character of the disease, the co-existence of different types of pain, and the discrete pathophysiological features of neuropathic pain in cancer compared to non-cancer neuropathic pain. Currently, word descriptors, physical examination and neurophysiological studies are the mainstay for the diagnosis of this type of pain, with questionnaires such as LANSS, NPQ, NPQ-SF, NPSI, and MPQ being used mostly on a research level. The sensitivity and specificity for some of these questionnaires are satisfying; however, modifications are needed to make them more convenient for routine clinical use. Up to now, the other scale often used in the diagnosis of non-cancer neuropathic pain, namely DN4, has not been used for cancer patients.

Aim: To examine the use of the DN4 questionnaire in the diagnosis of neuropathic cancer pain.

Methods: We used the validated greek version of DN4 in 1183 patients treated for cancer pain in our Pain Relief and Palliative Care Center of Aretaieion Hospital, University of Athens, in the past 2 years. An experienced clinician, blinded regarding the results of DN4 examined all patients and classified them as "definite" neuropathic pain, "possible" or "unlikely". For diagnosis, the investigator used word descriptors, physical examination and selected imaging modalities. We then compared the value of DN4 to classification by the clinician.

Results: DN4 sensitivity was 91% and specificity was 100%. Higher values correlated to pain classified as "definite" by the clinician. "Definite" neuropathic pain was more resistant to opioids but responded well to adjuvants. DN4 may be a valuable tool for the diagnosis of neuropathic pain in cancer patients.

P14 CHRONIC LOW BACK PAIN (LBP). TREATMENT WITH PREGABALINE AND CAUDAL ANESTHESIA

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Background: Mechanical low back pain is an important cause of chronic pain. Medication, surgical techniques and physiotherapy have been used. Our study searched the analgesic effect of caudal anesthesia (CA) and pregabaline on patients with LBP.

Method: Our study included 150 patients after their written consent, aged 40-78 y. with LBP.

Muscle spasm, pain score (VAS 0-100mm) and neurological status were estimated at time T0 before the treatment, T2 two weeks after and T4 four weeks after the start of the treatment. We performed CA with a mixture of 3 syringes of 10 ml ropivacaine 7,5%% , fentanyl 50μg and cortisone (celestone-chronodose). They stayed at the recovery room for at least three hours. They were also treated with pregabaline 150-300 mg daily divided on two doses.

Results: 27% of those patients suffered chronic pain after laminectomy or discectomy. VAS was > 50mm (55±5) at time T0. At time T2 VAS was 38±3 and at T4 28±2mm. Five patients referred hypesthesia after CA. Three had dizziness and fifteen xerostomia due to pregabaline. A total of 100 patients needed three times CA.

Conclusion: Combination of caudal anesthesia and pregabaline was effective and satisfactory for patients with chronic mechanical low back pain. Surgical treatment is not always the answer. Medical treatment with pregabaline and caudal anesthesia helped managing chronic pain and offered relief to those patients.

P15 SUPRASCAPULAR NERVE BLOCK (SNB) FOR THE TREATMENT OF PAINFUL SHOULDER DISORDERS

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Background. Pain in the shoulder region is a common problem and can produce significant disability. Its treatment is difficult and most patients do not benefit from long term analgesic and anti-inflammatory therapy.

Aim. To evaluate the effectiveness of SNB to relieve shoulder pain and improve range of movement.

Patients and Methods. Thirty patients (20 women and 10 men, 32-85 years of age) with various painful rheumatic shoulder syndromes and no significant pain relief while on NSAID treatment or other means of conservative therapy, were included in the study. All patients experienced significant constant pain or pain during active or passive movement (VAS score 7-9) and showed limited range of movement with loss of abduction, external and internal rotation. SNB was performed by injecting 10-15 ml of ropivacaine solution 0.50-0.75% twice weekly for three weeks, and then once a week for another three weeks. Dexamethazone 4 mg were added in the solution for the first two weeks. Patients were assessed prior to and after each injection and were followed for a period of 3-12 months.

Results. At the end of the first week all patients showed a significant improvement regarding pain relief (VAS 3-4) and restoration of range of movement (70-80%). At six weeks all patients showed almost complete resolution of pain (VAS 1-2) with a 90% improvement of range of movement.There were no complications during treatment.

Conclusion. SNB is a safe and effective treatment for shoulder pain. Its long lasting effects help patients avoid potential serious side effects of long term NSAID administration.

P16 TREATMENT OF ACUTE HERPES ZOSTER. CAN WE PREVENT POSTHERPETIC NEURALGIA?

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Background: Postherpetic neuralgia is a condition of intense neuropathic pain which often causes patient distress and severely affects quality of life. It is of the outmost importance to discover therapeutic modalities which, when added during the acute phase of herpes zoster, may prevent the development of postherpetic neuralgia.

Aim: To show that the prompt combined therapy (with an antiviral, analgesics, lidocaine, and pregabalin) for acute herpes zoster pain may be effective for the prevention of postherpetic neuralgia.

Methods: We treated 25 patients with acute herpes zoster and related neuropathic pain (VAS = 8-9). All patients received antiviral therapy for one week. In addition, a combination of codeine/paracetamol and pregabalin was administered. Prebagalin doses ranged from 150-600 mg/day, and paracetamol/codeine dose was 1.5gr/90mg per day. Patients remained on this regimen for 8 weeks. Lidocaine patch 5% was added as soon as the rash disappeared. Reassessment took place at 1 week, 4 weeks, 3 months, 6 months and 1 year.

Results: Already from the first week, all patients presented significant pain relief with VAS = 5-6. By the end of third month, a further reduction to VAS = 2-3 was accomplished, with only one patient reporting moderate pain. In 1 year, all patients were pain-free (VAS = 0-1). Study treatment was very well tolerated without any significant adverse events.

Conclusion: The institution of a combined regimen including an antiviral, analgesics, lidocaine and pregabalin for the therapy of acute herpes zoster pain, as soon as possible in the course of the disease, may be effective for the prevention of postherpetic neuralgia in 1 year. Further studies are required to confirm our results.

P17 PAIN MANAGEMENT EVALUATION OF GERIATRIC PATIENTS

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Background: Pain is a common complaint in elderly, referring to 25%-50% of community-dwelling and 45 – 80% of geriatric nursing home residents. Undertreatment has negative impact on health and quality of life of geriatric patients, resulting in depression, social isolation, cognitive impairment, immobility.

Aim: Evaluation of quality and effectiveness of management of geriatric patients with chronic non-malignant pain.

Methods: 200 randomly selected geriatric patients (at least three months duration of pain) were examined in a two-steps inquiry: medical file's data analysis and personal interviews. Quality and effectiveness of pain management was evaluated by therapeutic strategies used, pain relief (by Visual Analogue Scale), quality of life (by ACPA-Quality of Life Scale for Pain) and comorbid depression occurrence (by DSM-IV criteria).

Results: In 89% myoskeletal somatic pain was registered. 45% patients were on systematic planned and controlled treatment. All patients were on drug therapy, no nonpharmacological approaches for pain relief were registered. In 88% pain intensity was estimated as moderate and/or severe, with significantly restricted everyday activities (69%) and comorbid depression (41,5%).

Summary/Conclusions: The management of chronic non-malignant pain for most of our geriatric patients appears insufficient. Improvement of therapeutic strategies by including nonphamrmacological pain-relieving methods, planned treatment and regular reassessment of patient's somatic and mental health status are strongly required in order to achieve a higher quality and effectiveness of pain management of geriatric patients in our district.

P18 EXPERIENCE IN CHRONIC PAIN MANAGEMENT USING THE ARCHIMEDES CONSTANT-FLOW INFUSION PUMP SYSTEM FOR INTRATHECAL DELIVERY

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BACKGROUND: The use of implantable pumps since 1980s permitted a continuous and controlled intrathecal drug administration in the management of intractable pain.

AIM: To register our experience in chronic, intractable, benign or malignant pain management using the Archimedes implantable pump.

METHODS: The study included six patients age (35- 60) years old with chronic pain, resistant to oral or epidural administration of opioids.Four patients were suffered from cancer pain and were received 250 μg/h TTS fentanyl,100 mg/d morphine epidurally and NSAIDs and amitriptyline orally. Two patients were suffered from neuropathic pain and spasticity after spinal cord injury and were received orally in high doses baclofen, amitriptyline, pregabalin and gabapentin.All patients after positive morphine or baclofen test were placed an implantable pump.In cancer patients the infusion rate was 1ml/d (autonomy 50 days) and in neuropathic pain patients the infusion rate was 0.53 ml/d (autonomy 75 days). The dosage in cancer patients was 1-10 mg/d morphine,5 μg/d clonidine, 5-10 mg/d ropivacaine and in neuropathic pain patients 0.5-1 mg/d morphine, 5-30 μg/d and 70-100 μg/d baclofen.

RESULTS: Anesthesiologist and Neurosurgeon were responsible for the follow-up. The quality of life was improved significantly for all patients, according to night sleep, attendance and attitude. The doses of oral drugs were also reduced. Two complications were observed in two patients: CSF leak and apnea after morphine test, which were treated successfully.

CONCLUSIONS: The implantable pumps for intrathecal delivery consist an effective way in the management of chronic intractable pain. Our experience using the Archimedes constant-flow infusion pump system was excellent.

P19 MEMORY AND PAIN REVIEW

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Memory is the most important mechanism used by human beings to encode information from their environment, create a personal data base and format behaviors for survival. In recent decades research into memory has yielded a great deal of interesting information. One relatively new way to categorize memory is to distinguish between the explicit main storage area (in the hippocampus), and the implicit main storage area (in the amygdale).

The main mechanism for the creation of memory is thought to be LTP (Long Term Potentiation), which is possible due to the plasticity of synapses. Laboratory studies strongly indicate that to a certain extent, learning, memory and pain share common receptors, neurotransmitters and functional areas in the brain and spinal cord.[1,2]

On the other hand, numerous clinical randomized control studies conclude that chronic pain affects memory creation and recall,[3] at least with regard to explicit memory; implicit memory is less amenable to study due to the lack of research tools.

Numerous psychological studies indicate the role of learned behaviors in perception and coping with pain.[4]

Conclusion: Research data from molecular biology, neuroscience, psychology and chronic pain show a strong relationship between learning memory and pain. More research is needed in this area in order to further clarify the observed relationship.

P20 EFFECTIVENESS OF ACUPUNCTURE PROTOCOL IN TREATMENT OF CHRONIC LOW BACK PAIN.

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Introduction: The use of acupuncture to treat low back pain has increased, based in a large extent to placebo-controlled studies that have validated it as a reliable method of pain relief.

Aim: Objective of this study was to evaluate the efficacy of Traditional Chinese Medicine (TCM) Acupuncture Protocol for treatment of low back pain. Patients were treated at Physical Medicine and Rehabilitation department of G.Gennimatas Hospital during 2008.

Methods: TCM Protocol applied to15 patients suffering from low back pain. Mean age was 56±16,5 years. Duration of back pain was 7±3 months. All Participants went through laboratory tests in order to be excluded from other disease. Acupuncture protocol (Traditional Acupuncture Points and Auricular Points) applied from a Rehabilitation specialist. To each patient therapy was given twice a week and the duration was 10 sessions.

Results: Results estimated from VAS and LBPD questionnaire (Low Back Pain Disability Questionnaire), using t-test. SPSS 8 was used for the statistical analysis. Measures were taken at baseline, competent of treatment, and at three months after it. Effectiveness of the therapy had shown statistically significant benefits of acupuncture treatment ($p<0.05$). The results had remained at three months evaluation. Positive effects of acupuncture were similar to those obtained in international scientific documentation.

Conclusion: Acupuncture given from specialist effectively relieves patients who suffer from chronic low back pain. It is a safe and effective procedure, and it can maintain positive outcomes for periods of at least tree months or longer, without producing negative side-effects.

P21 VARIATIONS OF ARTERIES, VEINS, NERVES AND LYMPH NODES OF BREAST AND AXILLA, AND THEIR SIGNIFICANCE IN THE MODIFIED RADICAL MASTECTOMY, IN THE REMOVAL OF AXILLARY LYMPH NODES AND IN REGIONAL ANESTHESIA FOR BREAST SURGERY

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Aim. This paper analyzes topographic anatomy and underlines variations in the net of arteries, veins, nerves and lymph nodes, of breast and axilla. Furthermore, focus on their significance, in the preoperative intervention in local and regional anesthesia, as well as in intraoperative interventions, in the modified radical mastectomy and in removal of axillary lymph nodes.

Material and Methods. The project based on the results of the most important papers related to the subject, regarding the topographic anatomy and the clinical implications of arteries, veins, nerves and nerves in modified radical mastectomy, in the removal of lymph nodes of the axilla and in local and regional anesthesia for breast surgery. Our main tool was a paper focused on the Hellenic population, based on a project related to specific research of nerves' and vessels' variations, which took place in the medical school of Athens.

Results. The study confirmed, with several exceptions, the, already, published results about topographic anatomy and variations in arteries, veins, nerves and lymph nodes of the breast and the axilla.It also underlined dangers for preoperative, intraoperative and postoperative complications, in the modified radical mastectomy, in the removal of axillary lymph nodes and in the performance of local and regional anesthesia in breast surgery.Complications can increase, and, consequently, lowering quality of therapeutic interventions when, theoretically, surgeons and anesthetists neglect variations in the topographic anatomy of breast and axilla.

Conclusion. Deep knowledge of variations of arteries, veins, nerves and lymph nodes in the modified radical mastectomy, in the removal of axillary lymph nodes and in interventions for local and regional anaesthesia in breast surgery, preoperatively and intraoperatively, can protect patients from hemmorhage, nerve damage, postoperative seroma, fibrosis and shortening of the lower third of the pectoralis major muscle, as well as from failure in the anaesthetic result .

SCIENTIFIC PROGRAMME & GENERAL INFORMATION

SCIENTIFIC PROGRAMME

The Conference Scientific Committee co-ordinates the main Scientific Programme, which consists of Free Papers and Poster Presentations, Round Table discussions, Plenary Lectures, Workshops and Satellite Symposia.

ABSTRACTS

The Scientific Committee has welcomed the submission of original contributions for presentation at the Symposium and has accepted 37 abstracts.

FREE PAPERS

All authors have been informed of details concerning their Presentation.
The scheduled time of each oral presentation is 8' minutes. A 2' minutes discussion will follow each presentation.
The Oral Presentations will take place at Hall I of Royal Myconian Hotel, equipped with Data video display for Power Point presentations.

POSTER PRESENTATIONS

Posters have been gathered, numbered and listed according to the Scientific Committee's instructions. Posters will be shown in a special poster area. Posters' Size: Maximum width: 0.70cm, Maximum height: 120cm. Posters should be displayed on **Thursday, June 18th, at 17.00 hrs** and should be removed on **Saturday, June 20th, after 17.00hrs** and within the same day.
Posters will be discussed during the Poster Viewing Sessions I & II according to the instructions given to authors. The Presenting Authors are asked to stand by their poster in order to present orally, in 3' minutes, their posters to the Chairs of the Session.

SCIENTIFIC SESSIONS

All Scientific Sessions will be at the Meeting **Hall I** and **Hall II** of Royal Myconian Hotel, equipped with Screen, Data display projector, laser pointer.

CONTINUING MEDICAL EDUCATION

The Symposium has been accredited by the European Accreditation Council for Continual Medical Education (EACCME-UEMS) with **15** CME-CPD credits.

PC RECEPTION DESK

A PC reception desk for acceptance and checking of CDs and USBs is located nearby the Congress Halls. Speakers are kindly requested to hand out their PC disks at least 2 hours prior to their respective presentation.

FINAL PROGRAMME & BOOK OF ABSTRACTS

The Final Programme & Book of Abstracts containing detailed Scientific Programme, Conference information, all abstracts and a list of authors in alphabetical order, will be distributed to all registrants when they collect their Conference kit.

AWARDS

Two awards will be given by the Scientific Committee, during the Closing Ceremony, for best Oral and best Poster Presentations. This distinction will be open to all Participants and will be awarded for quality, research, originality and importance of the Topic.

CERTIFICATE OF ATTENDANCE

Certificate of attendance as well as Certificates for Hands-on demonstration Workshops I, II, IV, VI will be distributed to all registrants at the end of the Congress Sessions.

CONGRESS VENUE & DATES

The Congress is held in **Myconos island,** in Greece, at the **Royal Myconian Hotel** from **18th to 21st June, 2009**

ORGANIZING SECRETARIAT & TRAVEL AGENCY

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SYMPOSIUM SECRETARIAT AND HOSPITALITY DESK

The Symposium Secretariat desk will be located at the Conference Centre of the Royal Myconian Hotel and it will operate during Symposium hours.

LANGUAGE

The official language of the Congress will be ENGLISH.

WEATHER AND DRESS

In June, the average temperature in Mykonos island ranges from 26°C to 35°C.
Dress code to all social events: Smart casual

ELECTRIC POWER

Electric current in Greece is 220/240 AC/50 Hz . The plugs have 2 or 3 round pins similar to those in many European countries.

LIABILITY AND INSURANCE

The Organizers cannot be held responsible for any claim concerning liability, personal damage, lost, theft, illness, non appearance of speakers etc. We recommend participants and exhibitors to cover these risks by a respective insurance. The Programme is subject to change without notice. In case of cancellation of the event the registration fees will be refunded. No additional claims will be accepted.

NAME BADGES

Entry to the Scientific Sessions and Exhibition area will be allowed to delegates wearing the official Conference name badge.

COFFEE BREAKS - LUNCHES

Coffee breaks and lunches included in the Registration Fees will be served at the exhibition area

TRADE EXHIBITION

An exhibition of Scientific products, pharmaceuticals, instruments, equipment and relevant materials is organized at the Conference Venue.

SYMPOSIUM WEBSITE

Up-to-date information regarding the Congress will be available at the web site: www.Algos2009.gr

REGISTRATION

REGISTRATION FEES

	Until 20 May 2009	After 20 May 2009
WIP Members	€ 300	€ 400
WIP NON Members	€ 350	€ 450
NON Physicians /Nurses/ Residents	€ 200	€ 280
Accompanying persons	€ 150	€ 150
WORKSHOP I – Upper extremities (19/06/09 – 09.00hrs)	€ 20	–
WORKSHOP II – Lower extremities (19/06/09 – 15.00hrs)	€ 20	–
WORKSHOP IV – Upper extremities (20/06/09 – 08.30hrs)	€ 20	–
WORKSHOP VI – Lower extremities (20/06/09 – 15.00hrs)	€ 20	–

The registration fees for the participants cover: Access to the Scientific Sessions, Exhibition, Satellite Symposia, Congress material, Opening Ceremony & Welcome Dinner on Thursday June 18th, Farewell Dinner on Saturday, June 20th, Coffee Breaks and Certificate of Attendance for the Congress.
The registration fees for the accompanying persons cover: Opening Ceremony & Welcome Dinner on Thursday June 18th, Farewell Dinner on Saturday, June 20th and a Half Day tour to the archaeological site of Delos on Friday, June 19th.

ACCOMMODATION

Accommodation Package for MINIMUM STAY of 3 Nights: Check in June 18- Check out June 21, 2009
Rates shown below are per room, including Buffet breakfast & taxes

Hotel name	Location	Type of rooms	Single room	Double room	Triple room
ROYAL & IMPERIAL MYCONIAN HOTELS (4* Sup)	Elia	Run of the house	690 €	690 €	810 €
ST JOHN HOTEL (4*Sup)	Agios Ioannis	Run of the house	690 €	690 €	810 €
MYKONIAN MARE (4*Sup)	Agios Stefanos	Run of the house	660€	660 €	810 €
PETASOS BEACH (3*Sup)	Platis Gialos	Standard Sea View	645 €	645 €	750 €
		Classic Garden View	615 €	615 €	720 €
NISSAKI HOTEL (3*Sup)	Platis Gialos	Run of the house	615 €	615 €	825 €
PETINOS BEACH (3*Sup)	Platis Gialos	Run of the house	615 €	615 €	825 €
PELICAN BAY (3*Sup)	Platis Gialos	Superior	540 €	540 €	540 €
		Standard	420 €	420 €	510 €
MYCONIAN K (3*)	Mykonos	Run of the house	420 €	420 €	510 €
SAN GIORGIO (3*)	Paraga Beach	Run of the house	390 €	390 €	480 €

Accommodation for EXTRA STAY, for Pre – Post symposium dates
Rates shown below are per room, PER DAY, including Buffet breakfast & taxes

Hotel name	Type of rooms	Single room	Double room	Triple room
ROYAL & IMPERIAL MYCONIAN HOTELS (4* Sup)	Run of the house	230 €	230 €	270 €
ST JOHN HOTEL (4*Sup)	Run of the house	230 €	230 €	270 €
MYKONIAN MARE (4*Sup)	Run of the house	220 €	220 €	270 €
PETASOS BEACH (3*Sup)	Standard Sea View	215 €	215 €	250 €
	Classic Garden View	205 €	205 €	240 €
NISSAKI HOTEL (3*Sup)	Run of the house	205 €	205 €	275 €
PETINOS BEACH (3*Sup)	Run of the house	205 €	205 €	275 €
PELICAN BAY (3*Sup)	Superior	180 €	180 €	180 €
	Standard	140 €	140 €	170 €
MYCONIAN K (3*)	Run of the house	140 €	140 €	170 €
SAN GIORGIO (3*)	Run of the house	130 €	130 €	160 €

CANCELLATION POLICY FOR HOTEL ACCOMMODATION

All changes or cancellations have to be made in writing to ERA Ltd. **Please do not contact the hotel directly.**

1. Cancellation received by **April 20, 2009: 35% of the total stay will be charged.**
2. Cancellation received by **May 20, 2009: 70% of the total stay will be charged.**
3. Cancellation received after **May 20, 2009** and onward: **No refund.**

In the event of non-arrival, the hotel will automatically release the reservation and payment will be non-refundable.

CANCELLATION POLICY FOR REGISTRATION FEE

- Written cancellation, received by **May 20, 2009:** Full refund less **€ 50** administration fees.
- Written cancellation, received after **May 20, 2009:** No refund & full charge will apply.

CANCELLATION POLICY FOR PRE & POST TOURS RESERVATIONS

- Written cancellation, received by **June 1st, 2009:** Full refund less **€ 25** administration fees.
- Written cancellation, received after **June 1st, 2009:** No refund & full charge will apply.

CANCELLATION POLICY FOR AIRLINE RESERVATIONS

- Written cancellation, received by **May 20, 2009:** Full refund less **€ 25** handling fee.
- Written cancellation, received after **May 20, 2009:** No refund & full charge will apply.

PROGRAMME OF SOCIAL EVENTS & TOURS

June 18, 2009 – OPENING CEREMONY & WELCOME DINNER
The Opening Ceremony followed by a Welcome Dinner will be held the first day of the Symposium, at **Royal Myconian Hotel, at 19.30 hrs.** The Greek Parliament Deputy Liana Kanelli will give the Opening Lecture. During the Dinner everyone will have the opportunity to meet old acquaintances and make new friends (included in Registration fee)

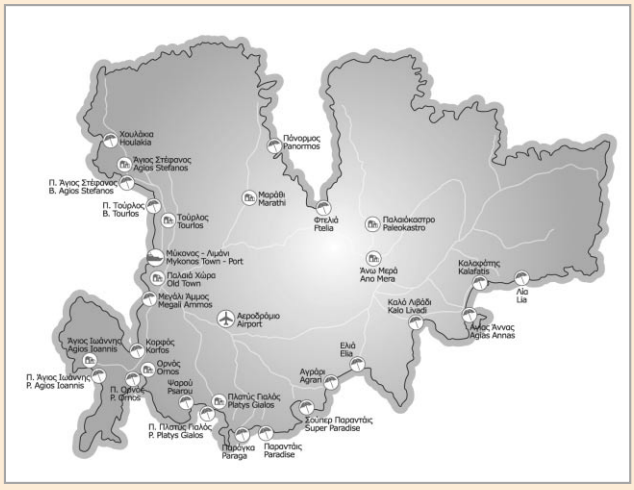
June 19, 2009 – HALF DAY TOUR TO DELOS
Half day tour to Delos will be held on Friday June 19, 2009 for the accompanying persons. *Please consult the Congress Secretariat for updated information* (included in Registration Fee of accompanying person).

June 20, 2009 – GALA DINNER
The Gala Dinner will be held the last day of the Symposium at the most beautiful veranda of Mykonos island, at **Royal Mykonian Hotel, at 21.00 hrs.** Organizers will spare no efforts to justify the reputation of Greek hospitality and make the Gala Dinner an unforgettable event (included in Registration fee).

TRANSPORTATION & SHUTTLE BUS SERVICE

Transportation from /to the airport of Myconos will be provided **on June 18** and o**n June 21** to all participants that have reserved tickets through ERA Ltd - the appointed Organizing office and Travel Agency of the Symposium, according to the schedule announced in the Preliminary Programme.
Information about exact arrival & departure pick-up times, as well as information about shuttle bus service from/to various Congress Hotels, will be available at the Congress Secretariat.

MYCONOS



Myconos is a Greek island renowned for its cosmopolitan character and its intense nightlife. The island is part of the Cyclades, lying between Tinos, Siros, Paros and Naxos. It spans an area of 105.183 km^2 (41 sq mi) and it is composed primarily of granite. It has little natural fresh water and relies on the desalination of sea water in order to meet its needs. It is believed that the island was named after a local hero, who is considered an offspring of the god Apollo and was worshipped locally in antiquity. In Greek mythology Myconos was the location of the battle between Zeus and the Titan, and the island was named in honor of Apollo's grandson Mycons. During these ancient times, Myconos, due to its proximity to the then highly populated island of Delos (situated about 2km away), became very important as a supply island and possibly as a getaway location for Delian citizens.
Today, Myconos is one of the most cosmopolitan islands in Greece, having become increasingly popular with mass tourism. It is known for its diverse and intense nightlife featured by a vast number of bars and nightclubs. Myconos is also known for its sandy beaches.

OPTIONAL TOURS FOR PRE & POST SYMPOSIUM PERIOD

The participants and accompanying persons will be able to enjoy an entertaining and relaxing tour programme for PRE & POST Symposium period. Greece is well known for her natural beauty, while hospitality is one of her main characteristics.

BY AIR

ISLAND OF CRETE – June 15-18, 2009 (Pre) or June 21-24, 2009 (Post)

Crete is the largest of the Greek Islands and is the last European frontier to Africa. Chania and , Rethimno at the southwest, Heraklion and Agios Nikolaos at the southeast part, are the four regions that make up this huge island. The ruins of the Minoan civilization, on which so many books and studies have been written, may be an asset to what some people claim; Crete is the mother of History.

COST IN SINGLE ROOM (FOR 1 PERSON): € 570
COST PER PERSON IN TWIN ROOM: € 380




Tour features:
- ✓ 3 nights accommodation **on BB** (Bed & Breakfast) in deluxe beach resort hotel.
- ✓ All transfers in Crete (2) and Athens (1)
- ✓ Half day guided bus tour to Knossos archaeological site
- ✓ Taxes and service charge

** Supplement for airfare per person one way (o/w): Athens - Heraklion: € 150 and Heraklion - Myconos: € 115 (Rates of February 2009)*

ISLAND OF SANTORINI – June 15-18, 2009 (Pre) or June 21-24, 2009 (Post)

A violent explosion that followed a major forceful geological rearrangement, caused the eruption of a scenic island Santorini. The solid black rocks and the volcanic lava are now covered by famous vineyards and small white washed villages. Walking through the winding streets of Fira full of quaint shops, bars and cafes, watching the sunset from a Cliffside café in Oia or lounging on the black sand beach of Kamari.

COST IN SINGLE ROOM(FOR 1 PERSON): € 570
COST PER PERSON IN TWIN ROOM: € 390



Tour features:
- ✓ 3 nights hotel accommodation on **Bed & Breakfast,** in A class typical Cycladic style hotel in Fira
- ✓ All transfers in Santorini (2) and Athens (1) from/ to the airport
- ✓ Half day guided boat trip to Oia
- ✓ Taxes and service charge

** Supplement for airfare per person one way (o/w): Athens - Santorini: € 150 and Santorini - Myconos: € 85 (Rates of February 2009)*

ISLAND OF RHODES – June 15-18, 2009 (Pre) or June 21-24, 2009 (Post)

The 230 miles of coastline give the impression that Rhodes has emerged from some fairy tale world. Situated in the southeast part of Mediterranean Sea, Rhodes is a highly tourist oriented place, offering it's visitors great variety of hotels, long lasting night life, fascinating duty free shopping. Above all visitors will admire the Old Medieval town and the Castle of Knights.

COST IN SINGLE ROOM (FOR 1 PERSON): € 530
COST PER PERSON IN TWIN ROOM: € 360



Tour features:
- ✓ 3 nights accommodation on **Bed & Breakfast,** in Deluxe beach resort hotel.
- ✓ All transfers in Rhodes (2) and Athens (1)
- ✓ Half day guided bus tour to the old city of Rhodes
- ✓ Taxes and service charge

** Supplement for airfare per person one way (o/w): Athens - Rhodes: € 155 and Rhodes – Myconos: € 122 (Rates of February 2009)*

BY BUS

2 Days / 1 Night DELPHI - (Bus Tour) – June 16-17, 2009 (Pre) **or** June 22-23, 2009 (Post)
(Estimated pick up time from Athens city Hotels is around 08.00hrs and the return the last day in Athens is around 19.00hrs)

COST IN SINGLE ROOM (FOR 1 PERSON): € 170
COST PER PERSON IN TWIN ROOM: € 140
Tour features:
✓ 2 days/1 night classical tour to Delphi, Arachova, by deluxe air- condition motor coach, in **A' class Hotel,** on half board basis, with English/ French speaking guide, entrance fees to the sites/ museums.

1st day: Drive through the fertile plain of Boeotia, crossing the towns of Thebes, Levadia and Arachova arrive in Delphi, the center of the Ancient World. On the slopes of Mount Parnassus, in a landscape of unparalleled beauty and majesty, lie the ruins of the Sanctuary of Apollo Pythios. Visit the Treasury of the Athenians, the Temple of Apollo and the Museum containing such masterpieces of Ancient Greek sculpture as the bronze Charioteer. Afternoon free. Dinner & Overnight.
2nd day: The whole morning is free for you to see more of the rugged grandeur of Delphi and take photographs to remind you of its beauty. Return to Athens by the same route.

2 Days/1 Night METEORA MONASTERIES -(Bus Tour) – June 15-16,2009 (Pre) **or** June 22-23, 2009 (Post)
(Estimated pick up time from Athens city Hotels is around 08.00hrs and the return the last day in Athens is around 19.00hrs)

COST IN SINGLE ROOM (FOR 1 PERSON): € 205
COST PER PERSON IN TWIN ROOM: € 175
Tour features:
✓ 2 days/1 night classical tour to Meteora, by deluxe air- condition motor coach, **in A' class Hotels,** on half board basis, with English/ French speaking guide, entrance fees to the sites/ museums.

1st day: Transfer to renowned Delphi. One hour and a half at leisure to stroll in the picturesque village, enjoy the breathtaking scenery from the slopes of Mount Parnassus till Itea, take pictures and enjoy a "Greek Coffee". Depart for Kalambaka, passing through picturesque villages and towns of Central Greece. Dinner and overnight.
2nd day: Visit Meteora and enjoy a unique and most impressive scenery with ageless Monasteries, containing priceless historical and religious treasures, standing between Earth and Sky atop huge rocks. Returns to Athens via Trikala, Lamia, Thermopylae (visit the monument of Leonidas) arrive in Athens early in the evening.

3 Days/ 2 Nights DELPHI – METEORA TOUR (Bus Tour) – June 21-23, 2009 (Post)
(Estimated pick up time from Athens city Hotels is around 08.00hrs and the return the last day in Athens is around 19.00hrs)

COST IN SINGLE ROOM (FOR 1 PERSON): € 400
COST PER PERSON IN TWIN ROOM: € 336
Tour features:
✓ 3 days/2 nights classical tour to Delphi, Arachova, Kalambaka, Meteora by deluxe air- condition motor coach, in **A' class Hotels** on half board basis, with English/ French speaking guide, entrance fees to the sites/ museums.

1st day: Leave for Delphi via Thebes, Levadia and the picturesque village of Arachova, on the slopes of Mount Parnassus, arrive in Delphi and visit the Sanctuary of Apollo Pythios, (Treasury of the Athenians, Temple of Apollo, e.t.c.) and the Museum. Afternoon free. Enjoy dinner and stay overnight at Delphi.
2nd day: Morning free. Leave Delphi for an interesting trip through Central Greece and the town of Lamia to Kalambaka. Enjoy dinner and stay overnight.
3rd day: Visit Meteora, particularly impressive scenery, ageless Monasteries, containing priceless historical and religious treasures, stand suspended between earth and sky, on top of granite rocks. Returns to Athens via Trikala, Lamia, Thermopylae (visit Leonida's Monument), arrive in Athens early in the evening.

3 Days/2 Nights CLASSICAL TOUR (Bus Tour) – June 15-17, 2009 (Pre) **or** June 22-24,2009 (Post)
(Estimated pick up time from Athens city Hotels is around 08.00hrs and the return the last day in Athens is around 19.00hrs)

COST IN SINGLE ROOM (FOR 1 PERSON): € 400
COST PER PERSON IN TWIN ROOM: € 336
Tour features:
✓ 3 days/2 nights classical tour to Corinth, Nauplion, Epidaurus, Mycenae, Olympia, Delphi, Arachova,
by deluxe air- condition motor coach, in A' class Hotels, on half board basis, with English/ French speaking guide, entrance fees to the sites/ museums.

Prehistory, the Classical period, Roman domination, the Byzantine Empire, the Crusades and Modern times: Greece through the centuries will unfold before you o-n this three-day tour.

OPTIONAL TOURS FOR PRE & POST SYMPOSIUM PERIOD

1st day: Leave by the coastal road to the Corinth Canal (short stop). Drive o-n and visit the Theatre of Epidauros famous for its remarkable acoustics. Then proceed to the town of Nauplion (short stop) drive o-n to Mycenae and visit the Archaeological Site and the Tomb of Agamemnon. Then depart for Olympia through Central Peloponnese and the Towns of Tripolis and Megalopolis. Overnight in Olympia, the Cradle of the Olympic Games. (*Dinner*)
2nd day: In the morning visit the Archaeological Site with the Sanctuary of Olympian Zeus, the Ancient Stadium and the Archaeological Museum. Then drive o-n through the plains of Eliad and Achaia until the magnificent bridge which is crossing the Corinthian Bay from Rion to Antirion. Pass by the picturesque Towns of Nafpactos (Lepanto) and Itea, arrive in Delphi. Overnight. (*Dinner*)
3rd day: In the morning visit the Archaeological Site and the Museum. Then drive through the village of Arachova, renowned for its colorful rugs and carpets. Return to Athens via Levadia and Thebes. Arrive in Athens early in the even.

4 Days/3 Nights CLASSICAL TOUR & METEORA (Bus Tour) – June 22-25,2009 (Post)
(Estimated pick up time from Athens city Hotels is around 08.00hrs and the return the last day in Athens is around 19.00hrs)

COST IN SINGLE ROOM: **€ 600**
COST PER PERSON IN TWIN ROOM: **€ 500**
Tour features:
✓ 4 days/3 nights classical tour to Corinth, Nauplion, Epidaurus, Mycenae, Olympia, Delphi, Arachova, Meteora by deluxe air- condition motor coach, in **A' class Hotels,** on half board basis, with English/ French speaking guide, entrance fees to the sites/museums.

Prehistory, the Classical Period, Roman Domination, the Byzantine Empire, the Crusades and Modern times: Greece through the Centuries will unfold before you on this 4 days tour.

1st day: Leave by the Coastal Road to the Corinth Canal (short stop).
Drive on and visit the Theatre of Epidauros famous for its remarkable acoustics. Then proceed to the Town of Nauplion (short stop) drive on to Mycenae and visit the Archaeological Site and the Tomb of Agamemnon. Then depart for Olympia through Central Pelopennese and the Towns of Tripolis and Megalopolis. Overnight in Olympia the Cradle of the Olympic Games. (*Dinner*)
2nd day: In the morning visit the Archaeological Site with Sanctuary of Olympian Zeus, the ancient Stadium and the Archaeological Museum. Then drive on through the plains of Eliad and Achaia until the magnificent Bridge which is crossing the Corinthian Bay from Rion to Antirion. Pass by the picturesque owns of Nafpactos (Lepanto) and Itea, arrive in Delphi. Overnight. (*Dinner*)
3rd day: In the morning visit the Archaeological Site and the Museum. Depart for Kalambaka, a small Town situated at the foot of the astonishing complex of Meteora, gigantic rocks. Overnight. (*Dinner*)
4th day: Visit Meteora, among striking scenery, perched on top of huge rocks which seem to be suspended in mid-air, stand ageless Monasteries, where you can see exquisite speciments of Byzantine Art. Return to Athens via Trikala, Lamia, Thermopylae (visit the monument of Leonidas). Arrive in Athens early in the evening.

Important notice:
*For the Pre & Post Symposium **Bus Tours,** you should book **in Athens,** 1 overnight the day before for the Pre Tour and 1 overnight the last day of the Tour for the Post Tours. Please contact ERA Ltd by e-mail info@era.gr, for assistance.*

Symposium Secretariat:
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e-mail: info@era.gr

INDEX OF AUTHORS

NOTES

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