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# ASRA NEWS

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## President's Message

### What's New In Regional Anesthesia?

The President's message this quarter is guest authored by Joseph M. Neal, MD. Dr. Neal is Editor-in-Chief, *Regional Anesthesia and Pain Medicine* and a member of the ASRA Board of Directors. This article appears concomitantly in the ASA and ASRA newsletters.

These are exciting times for regional anesthesia enthusiasts. In this brief report, I discuss three important areas of advancement in the sub-specialty—innovative techniques for optimizing and extending the duration of peripheral nerve blockade, scholarly initiatives to define best practice, and enhanced ability to localize nerves. Heightened interest in regional anesthesia is further underscored by the ASA House of Delegates' October 2003 decision to create a Committee on Regional Anesthesia, which is charged with coordinating and advancing educational opportunities pertaining to this vital component of anesthetic practice.

#### Optimizing and extending peripheral nerve blockade

While the 1990s brought tremendous advances in neuraxis-mediated postoperative analgesia, the first decade of the new millennium promises similar breakthroughs in peripheral nerve local anesthetic blockade. Innovation comes in two forms. First, and largely thanks to our European colleagues, we have come to understand the added value of seeking multiple nerve stimulations and perineural injections as a means of enhancing peripheral nerve blocks. Although they are not advantageous for the interscalene or supraclavicular approaches because of the tightly configured neural anatomy in those locations, multiple injections clearly improve block quality and perhaps hasten onset time when applied to more widely spaced nerves, such as with the axillary, infraclavicular, or lateral popliteal approaches. More important, anesthesiologists now have the ability to prolong peripheral nerve blockade beyond the duration of bupivacaine or ropivacaine. The use of continuous perineural catheters has prompted a flurry of clinical trials within the academic community and a heightened interest among private-practice anesthesiologists. Initial randomized clinical trials demonstrate the ability of continuous catheters to provide superior analgesia as compared to placebo, thereby limiting opioid-induced side effects. In logical progression, current

studies are attempting to document further outcome benefits, especially in the ambulatory setting or with rehabilitation after total joint replacement. Advances in catheter and infusion pump technology should further enhance catheter-based analgesia. For example, the ability of stimulating catheter systems to ensure a perineural location of the catheter tip now must be proven to enhance postoperative analgesia as compared to the older and less expensive systems that are designed to be placed blindly. Furthermore and despite not yet being commercially available, sustained release microsphere and liposomal preparations of local anesthetic or opioid hold great promise for prolonging analgesia.

#### Defining best clinical practice

As in other areas of medical practice, we are faced daily with practical questions about how best to conduct our practice in the absence of definitive evidence; yet the "holy grail" of suitably powered randomized clinical trials is largely unavailable. The American Society of Regional Anesthesia and Pain Medicine (ASRA) has been a leader in developing two facets of scholarly inquiry aimed at providing practitioners with extensively reviewed and widely available resources related to managing the day-to-day challenges of patient care. An example of the first initiative is documenting our current understanding of brachial plexus anesthesia. In 2001, a panel of experts examined the existing upper extremity anesthesia literature and the ensuing review article was published in 2002.<sup>1</sup> The entire source document, including anatomic images, is available to ASRA members and can be found at [www.asra.com](http://www.asra.com). A similar review of lower extremity regional anesthesia is scheduled for fall 2004. The second category of scholarly inquiry takes the form of expert opinion panels convened to exhaustively search the literature and make recommendations for best practices pertaining to common clinical dilemmas that have "no right answer." The society's flagship effort in this regard was their 1998 Guidelines on Neuraxial Anesthesia and Anticoagulation, which were subsequently updated in 2002. Essential recommendations from this panel are available at [www.asra.com](http://www.asra.com) with the full report published in *Regional Anesthesia and Pain Medicine*.<sup>2</sup> ASRA recently completed a similar Consensus Conference on Infectious Complications of Regional Anesthesia at its



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spring 2004 meeting. This conference considered such practical concerns as acceptable aseptic technique when placing blocks or pain management hardware; the risks of performing regional techniques in the infected or immunocompromised patient; and defining proper infectious prophylaxis prior to placing continuous delivery systems. Proceedings of this conference will be published in late 2004 in *Regional Anesthesia and Pain Medicine*. The ASRA spring 2005 meeting in Toronto will consider Neurologic Complications of Regional Anesthesia and Pain Medicine by analyzing how to manage the persistent paresthesia, when it is appropriate to perform regional techniques in anesthetized patients, and the risks of performing regional techniques in patients with pre-existing neurological conditions.

#### Enhancing nerve localization

Performing regional anesthesia is easier when one can quickly and accurately localize the target nerve or plexus. Two promising areas of accelerated investigation are noteworthy. First are studies seeking to understand the nature of needle-to-nerve proximity. Despite decades of experience with nerve localization, which was first based on paresthesia-seeking techniques and more recently on peripheral nerve stimulation, our understanding of these modalities is rudimentary. Why do we sometimes elicit a paresthesia before we observe a peripheral nerve stimulator-induced motor response? What exactly does a paresthesia represent? How do we improve nerve stimulator design to ensure proximity to the target nerve without impalement? These seemingly basic questions have gained importance as we begin to relate peripheral neuroanatomy to the properties of nerve stimulation. Perhaps even more exciting is the commercial development of high frequency ultrasonic probes that allow us to actually visualize the target nerve. Initial clinical studies document the ability of this

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# Ultrasound-guided Infraclavicular Brachial Plexus Block



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Infraclavicular block has become a popular technique for producing anesthesia and postoperative analgesia of the upper limb. It has the advantage of blocking all three cords of the brachial plexus while reducing the risk of pneumothorax associated with supraclavicular block. Catheter placement is facilitated by the relative ease of insertion and fixation of the catheter to the anterior chest wall.

## Applied Anatomy:

At the infraclavicular level, the cords of the brachial plexus are arranged around the 2nd part of the axillary artery. The technique described is based on the coracoid approach described by Wilson et al<sup>1</sup> except that the needle insertion point is immediately inferior to the clavicle (figure 1) and similar to the position recently described by Klaastad et al.<sup>2</sup> This allows the ultrasound probe (Philips ATL HDI 5000 SonoCT unit; Philips Medical Systems ATL Ultrasound, Bothell, WA. 4-7MHz probe) to be applied to the anterior chest wall to generate the typical parasagittal view of the 2nd part of the axillary artery (figure 2).

## Technique:

Using existing techniques, successful block of the plexus at this level requires muscle stimulation in the distal forearm or hand because stimulation of muscle groups (e.g., biceps) in the upper arm leads to a high incidence of block failure.<sup>3</sup> Obtaining distal stimulation using blind techniques can require prolonged and possibly painful attempts that can also lead to vascular injury and increases the possibility of pleural puncture.

Our ultrasound-guided technique uses a needle insertion point just inferior to the clavicle and 2cm medial to the coracoid process. The needle tip is advanced under direct vision to the superolateral aspect of the 2nd part of the axillary artery and at this point, if desired, a nerve stimulator can be used to confirm distal stimulation in the forearm or hand. Usually stimulation of the lateral cord can be obtained at the 9 o'clock position and the posterior cord at the 6 o'clock position on the artery (figure 2). We currently use a 17G insulated Tuohy needle with stimulating catheter (Arrow International, Reading, PA) which facilitates visualization of the needle tip as it is positioned posterior to the axillary artery.

With this technique, obtaining distal muscle stimulation is not essential because successful block is usually associated with spread of local anesthetic immediately superior and posterior to the 2nd part of the axillary artery (figure 2). This is usually seen as an expanding hypoechoic (dark) mass around both the lateral and posterior cords. Inferior spread to the area of the medial cord is often not seen until higher volumes (>20cc) are injected. Confirmation of appropriate spread of injectate can be made using 2-5mls 5% dextrose solution prior to insertion of the catheter. Dextrose 5% has the advantage that stimulation through the needle and/or catheter remains possible even after injection. If spread of

injectate is observed anterior to the artery or proximal muscle stimulation is obtained, then the needle should be repositioned posterior to the artery and posterior spread of injectate confirmed. The catheter can then be inserted, distal muscle stimulation confirmed, if desired, and the catheter secured to the anterior chest wall.

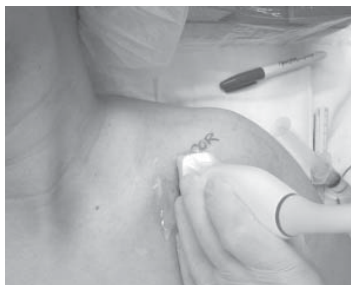
## Local anesthetics:

A 1:1 mixture of 2% lidocaine and 0.5% bupivacaine both with 1:200000 epinephrine in a 30-40cc volume is used to institute the block. Ropivacaine 0.5% can also be used alone or in combination with lidocaine 2%. The lidocaine provides fast onset with the bupivacaine or ropivacaine providing increased duration of action. Clonidine 0.5mg/kg<sup>4</sup> can also be added to extend the duration of postoperative analgesia. A continuous infusion of dilute local anesthetic such as ropivacaine 0.2% can be used for postoperative analgesia.<sup>5</sup>

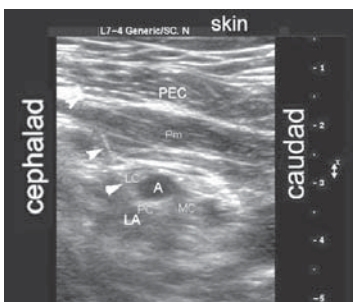
## Risks:

The usual risks of infraclavicular block including intravascular injection, pleural or nerve injury are also possible with an ultrasound-guided approach. It is important to be able to visualize the tip of the needle as it is advanced, otherwise injury can occur without knowledge of the practitioner. With training, it is possible to directly visualize the needle tip and be confident of avoiding the vascular and pleural structures during the block procedure. The path of the needle with the classical coracoid approach would appear to pass directly through the axillary artery or vein in order to reach the posterior cord of the brachial plexus. Vascular puncture is therefore not surprising without ultrasound guidance.

After confirmation of needle or catheter position, incremental dosing and frequent negative aspiration are important to avoid intravascular injection as per conventional techniques. Absence of local anesthetic spread can indicate intravascular injection although this may also be due to inaccurate visualization of needle or catheter tip.



*Figure 1: Photograph of anterior chest wall demonstrating correct probe orientation to obtain parasagittal sonogram of 2nd part of axillary artery and associated cords of the brachial plexus. The needle insertion point is 1cm medial to the "C" of COR (coracoid) and aimed inferiorly and posteriorly at a 45° angle along the long axis of the ultrasound probe.*



*Figure 2: Parasagittal sonogram of the 2nd part of the axillary artery and cords of the brachial plexus 2cm medial to the coracoid process. Arrows indicate catheter position. Pec, pectoralis major; Pm, pectoralis minor; LA, local anesthetic spread; A, artery; LC, lateral cord; PC, posterior cord; MC, medial cord.*

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# PRO&CON PRO&CON PRO&CON

## Chlorprocaine – The ideal drug for outpatient surgery

Spinal anesthesia is the simplest of regional techniques in the outpatient setting and offers considerable advantages in ease of blockade, rapidity of onset, and reliability.<sup>1</sup> Unfortunately, it has been plagued in recent years by problems with the choice of the appropriate local anesthetic drug. Bupivacaine has an unacceptably long duration of action in the outpatient setting. Although shorter durations have been shown with lower doses,<sup>2</sup> the extreme variability with this drug makes it an unpredictable alternative in the outpatient setting.<sup>3</sup> Shorter duration drugs, such as procaine, have been used but may be associated with nausea and block failure.<sup>4</sup> Lidocaine has been the most popular short duration local anesthetic, but has recently been clouded by the syndrome of transient neurologic symptoms (TNS). This has led many to avoid the use of lidocaine,<sup>5</sup> and has led some to speculate about its neurotoxicity when it is placed in the subarachnoid space.<sup>6</sup>

The reintroduction of 2-chlorprocaine (2CP) this year as a spinal anesthetic agent is exciting. 2CP was first introduced for this use in 1952.<sup>7</sup> It was later reformulated to include preservatives, which appear to be related to episodes of neurotoxicity reported with unintentional subarachnoid injection of large doses in the late 1970s.<sup>8-10</sup> Extensive laboratory investigation by Gissen, et al, and others suggested that this toxicity was related to the presence of sodium bisulfite at a low pH, in which situation the compound releases neurotoxic concentrations of sulfurous acid.<sup>11,12</sup> This mechanism of toxicity has been questioned.<sup>13</sup> The formulation of 2CP has been changed again several times, and now is back to the original “preservative free” configuration. Kouri and Kopacz reinvestigated this formulation in human volunteers, and found that it produces satisfactory spinal anesthesia of a shorter duration than other drugs, making it a potential ideal choice for outpatient surgical procedures.<sup>14</sup>

What do we know about the safety of doing this? Although the preservative-free preparation has been approved previously by the FDA for subarachnoid use, concern raised by previous case reports of neurotoxicity with other preparations needs to be considered. Indeed, the laboratory data referred to earlier suggests that 2CP itself is inherently neurotoxic.<sup>13</sup> That investigation, however, involved a rat model in which relatively large doses of 2CP were injected through an indwelling subarachnoid catheter at a dose of 14 mg/kg, equivalent to over 1,000 mg in an adult human. The toxicity seen involved mild to moderate changes in histological pathology, averaging a score of  $1 \pm 0.1$  (on a 0 to 3 scale) in the 56 rats who received the preservative free 2CP, compared to 0 with saline infusions (0 = no damage, 1 = “mild”, 2 = “moderate”). While these results are troubling, they are not different from results of similar studies done in the same animal model with lidocaine and prilocaine.<sup>15</sup> In those studies, the dosage again was relatively large, equivalent to 12 mg/kg, or over 800 mg for an adult human. These data are disturbing, but emphasize that all local anesthetics are potentially toxic, as has been pointed out in other reviews.<sup>16</sup>

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Dosage is critical. A closer review reveals that most of the cases of previous 2CP toxicity involved large doses, usually injected unintentionally subarachnoid. We know from other reviews that all local anesthetics are toxic in a dose related manner, especially when injected subarachnoid.<sup>17,18</sup> Although these laboratory reports remind us of the danger of all our drugs, we have to remember that toxicity with standard clinical doses of local anesthetics is extremely rare. It seems prudent to limit the doses of all drugs that we inject subarachnoid,<sup>6</sup> and 2CP should be no exception. The laboratory data reviewed above suggests that 2CP has no greater potential for toxicity than lidocaine or prilocaine, if used in appropriate doses. The 40 mg dose recommended by Kopacz et al. would appear to be in the low range.

What do we know about the clinical use of 2CP? As mentioned before, the original study by Foldes included over 200 patients who were given subarachnoid injections including doses of 100 mg without adverse sequelae.<sup>7</sup> There are no published series after its introduction and no reports of neurotoxicity. Following the reformulation in the last several years, there has been renewed interest in the use of 2CP as a spinal anesthetic. Palos from Switzerland reported a series of over 500 cases with no neurological problems at the ASRA meeting in San Diego.<sup>19</sup> His series is now expanded to include over 1,000 patients with an apparent good safety margin (personal communication). Kopacz and his colleagues have studied a number of volunteers without neurological sequelae<sup>14, 20-22</sup> and now have administered the drug to over 400 patients without sequelae (personal communication). Their clinical experience supports that it is shorter in duration than lidocaine, and not associated with TNS. In a 40 mg dose, it is an excellent anesthetic for the short outpatient procedures such as knee arthroscopy. Does this mean that it is safe? As we know, no drug we use in anesthesia or medicine is “safe”. However, we have laboratory evidence and clinical experience that suggests it is no more toxic than other local anesthetics, and we should move ahead with clinical experience to confirm its safety and advantages.

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# PRO&CON PRO&CON PRO&CON

## The potential drawbacks of chloroprocaine for spinal anesthesia

Over the last decade there has been escalating interest in finding a drug to replace lidocaine for spinal anesthesia. Dissatisfaction with lidocaine stems from two sources: rare reports of persistent or permanent neurologic injury,<sup>1,3</sup> and the recognition that transient neurologic symptoms (TNS) may occur in up to a third of patients receiving this agent for spinal anesthesia.<sup>4,7</sup> With respect to the former, appreciation of the factors that may contribute to injury, (e.g., dose, concentration, maldistribution) has led to modifications in practice that have substantially decreased risk. The issue of TNS, defined as pain and/or dysesthesia in the buttocks or lower extremities, has proven to be formidable. Substitution of other available and commonly used anesthetics has met with limited success, except for the use of bupivacaine for longer surgical procedures. Although prilocaine may hold promise,<sup>8</sup> there is no commercial formulation in the U.S. that would be appropriate for intrathecal use. Is chloroprocaine the answer? Perhaps.

In January of this year, Kopacz and colleagues published a series of studies in which chloroprocaine was administered intrathecally to volunteers.<sup>9-12</sup> The studies are well reviewed by Dr. Mulroy, but the key findings are worth reiterating: chloroprocaine produced anesthesia of short duration with attainment of institutional discharge criteria more rapidly than with lidocaine;<sup>9</sup> anesthesia was enhanced by administration of fentanyl<sup>11</sup> or epinephrine<sup>12</sup> (though the latter was associated with significant side effects); and, in contrast to subjects receiving lidocaine, administration of chloroprocaine was not associated with TNS in this series of 69 spinals.<sup>9</sup>

These are not the first studies describing the use of chloroprocaine for this purpose. In 1952, Foldes and McNall reported a series of 214 patients receiving spinal chloroprocaine for surgical anesthesia.<sup>13</sup> Despite their report, chloroprocaine never developed as a spinal anesthetic, finding instead an important place in epidural anesthesia, particularly in obstetrics owing to its rapid rate of metabolism and minimal risk of fetal exposure.

In the early 1980s a series of case reports of severe neurologic injury associated with the use of epidural chloroprocaine raised concern regarding its toxicity.<sup>14-16</sup> However, injury appeared to result from the inadvertent intrathecal injection of a large dose intended for epidural administration. Furthermore, the formulation of chloroprocaine contained 0.2% sodium bisulfite, and in subsequent experiments, Gissen demonstrated that the combination of a low pH and sodium bisulfite could result in irreversible conduction failure in isolated rabbit vagus nerve, while conduction was unaffected at higher pH, and conduction block was reversible with chloroprocaine alone.<sup>17,18</sup> These results appeared to implicate bisulfite, with speculation that injury was secondary to the release of sulfur dioxide.

Based on the foregoing, intrathecal chloroprocaine would appear safe to use as an intrathecal agent. Unfortunately, the situation is a bit more complicated. First, while it has been assumed that the early injuries that occurred with chloroprocaine resulted from unintentional intrathecal injection of large volumes of solution intended for epidural administration, several of the reported cases lacked clear evidence for misplaced drug delivery.<sup>17,18</sup> Second, the

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lack of reported adverse effects in a series of cases from the early 1950s must be viewed with skepticism—there are numerous examples of unsafe practices that appear harmless in the early literature. Finally, although several investigators reported results that supported the findings of Gissen,<sup>19,21</sup> others did not.<sup>22,23</sup> Recent in vivo data from our laboratory not only conflict with those of Gissen, but surprisingly appear to suggest that bisulfite is potentially neuroprotective.<sup>24</sup>

Rather ironically, our recent studies exonerating bisulfite and implicating chloroprocaine can be viewed in a light that would lend support to the use of spinal chloroprocaine.<sup>24</sup> The model used provides for quantitative assessment of functional impairment and histologic damage. Although the experiments were not undertaken to assess the toxicity of chloroprocaine relative to other available anesthetics, identical methodology has been used to evaluate the neurotoxicity of lidocaine.<sup>25</sup> Under these conditions, 2.5% lidocaine induced slightly less sensory dysfunction (MPEs of 48% and 56%) and resulted in slightly greater nerve injury scores (1.22 and 1.23) than 3% chloroprocaine. Although one must be cautious using historical comparisons, these data suggest that the toxicity of chloroprocaine and lidocaine are roughly comparable on a mg for mg basis. The recent data provided by Kopacz and co-workers suggest that chloroprocaine will be effective at doses in the 30 to 60 mg range,<sup>25</sup> lower than that anticipated from the early studies of Foldes and McNall,<sup>13</sup> and within the range that one would anticipate as safe based on these recent comparative toxicity data.<sup>24</sup>

The occurrence of “flu-like” symptoms in volunteers receiving chloroprocaine with epinephrine containing bisulfite is surprising and deserves comment.<sup>12</sup> The authors postulate that this may be due to the combination of a low pH and the presence of bisulfite in the epinephrine solution, despite the rather miniscule quantities. Whether this is correct remains to be determined. However, if it is correct it suggests a remarkable vulnerability to bisulfite and, despite recent experimental data, argues strongly against using the commercial epidural solution that contains bisulfite for spinal anesthesia at this moment. (One ml of the Abbott formulation contains 10X the dose of bisulfite used in the recent volunteer study of chloroprocaine with epinephrine.)

Thus, despite the uncertainties, there are reasons to think chloroprocaine might be safe to administer intrathecally provided the solution is bisulfite-free and the doses are appropriate for spinal anesthesia. It is reasonable to draw conclusions from the experience with spinal chloroprocaine about a commonly occurring problem

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## Literature Review

### The Effect of Neurolytic Celiac Plexus Block on Pain Relief, Quality of Life, and Survival in Patients with Unresectable Pancreatic Cancer

Wong GY, Schroeder DR, Carns PE, Wilson JL, Martin DP, Kinney MO, Mantilla CB, Warner DO. *JAMA*, 2004 Mar 3;291(9):1092-9

A recent National Institutes of Health State-of-the Science Statement on Symptom Management in Cancer (July 15-17, 2002) highlighted the importance of appropriate management of pain and symptoms in patients with cancer. In particular, Pain Medicine physicians are frequently consulted to provide treatment options for patients with pain due to pancreatic adenocarcinoma, an aggressive tumor associated with extremely high mortality. Pain is present in the upper abdomen and/or thoracolumbar back in up to 73% of these patients at the time of diagnosis.<sup>1</sup> Thus, a major focus is to optimize quality of life (QOL) by managing symptoms, especially pain, in these patients.

In general, a recommended approach to manage cancer pain has utilized systemic medications according to the World Health Organization (WHO) analgesic ladder.<sup>2</sup> However, some patients do not receive adequate pain relief with systemic analgesics alone, or experience dose-limiting opioid-related side effects.<sup>3</sup> In these circumstances, celiac plexus or splanchnic nerve blocks with neurolytic solutions may provide analgesia by interrupting visceral afferent pain transmission from the upper abdomen.<sup>4</sup> Randomized clinical trials evaluating the efficacy of neurolytic celiac plexus block (NCPB) in pancreatic cancer pain have been limited by small sample sizes, lack of blinding, infrequent pain assessments, or lack of standardized delivery of systemic analgesic medications.<sup>5-8</sup> Indeed, the role of neurolytic blocks in the management of any type of cancer pain has not been firmly established by randomized, blinded clinical trials.

The purpose of our prospective, randomized, double-blinded, sham-controlled clinical trial was to test the hypothesis that neurolytic celiac plexus block improves pain relief, quality of life, and survival compared to optimized systemic analgesic therapy alone in patients with unresectable pancreatic cancer.<sup>9</sup> A total of 100 eligible unresectable pancreatic cancer patients with significant pain were enrolled at Mayo Clinic and followed until demise or at least for one year. Patients were randomized to receive either a NCPB or systemic analgesic therapy (SAT) alone

with a blinded sham injection. All patients could subsequently receive additional opioids managed by a blinded clinician. Pain intensity (0-10 numerical rating scale [NRS]), QOL, opioid consumption and related side effects, and survival time were assessed weekly by a blinded observer.

Baseline pain was similar between NCPB and SAT groups (4.4±1.7 and 4.1±1.8, respectively). At the first week following randomization, pain intensity (2.1±1.4 and 2.7±2.1, respectively) and QOL were significantly ( $p<0.001$ ) improved in both groups, with a larger decrease in pain for patients with NCPB (53% reduction from baseline) compared to SAT (27%) ( $p=0.005$ ). The proportion of patients reporting "moderate" to "severe" pain intensity ( $>5/10$  NRS) was significantly higher in the SAT group (40%) vs NCPB (14%) ( $p=0.005$ ) during the first six weeks of study. From repeated measures analysis, pain continued to be significantly ( $p=0.013$ ) lower for NCPB vs SAT over time. However, opioid consumption ( $p=0.93$ ), frequency of opioid side effects (all  $p>0.10$ ) and QOL ( $p=0.46$ ) were not significantly different between groups. One year following randomization, 16% of patients in the NCPB group and 6% in the SAT group were alive but, survival did not differ significantly between groups ( $p=0.26$ , proportional hazards regression).

In conclusion, we found that the combination of NCPB and systemic analgesics provides significantly better analgesia than optimized SAT alone. However, the NCPB had no effect on opioid consumption, QOL, or survival. Future directions will focus on translational research collaborations between basic and clinical scientists to improve our understanding of the unique pain mechanisms in pancreatic cancer and to apply the discovery of effective novel analgesic therapies to the clinical setting.

**Acknowledgements:** This study was supported in part by the Foundation for Anesthesia, Education, and Research (FAER) New Investigator Award, Martin Ehler's Program for Psychosocial Oncology and Spiritual Care at the Mayo Clinic Cancer Center, Cancer Treatment Research Foundation, Mayo Anesthesiology Clinical Research Unit, and Mayo Clinic and Foundation.

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## 2004 Annual Fall Pain Meeting Preview



This year's Annual Fall Pain Meeting will return to the Pointe Hilton Squaw Peak Resort in Phoenix, Arizona, November 11-14. You should have already received the first notice and with it, the program

schedule. If not, I would encourage you to review the content on the ASRA website at [www.asra.com](http://www.asra.com).

The scientific committee has done an exceptional job in planning a program balanced in content, thus ratifying the multi-disciplinary approach which prevails in modern pain management. With this concept in mind, several lectures will be offered to help participants gain knowledge in basic sciences and their clinical applications to the diagnosis and initial and advanced treatment of different pain conditions.

Moreover, the refresher course lectures are designed to update the participants in the principles of pain management using a basic science-clinical correlation approach. This format was very well received by participants at the meeting last year. The committee and I hope you will find the approach very interesting and stimulating this year as well.

We learned from past meeting evaluations that pain specialists like to discuss their cases. Thus, we have doubled the number of PBLDs this year to be held at lunchtime.

The parallel sessions are designed to be comprehensive and all-inclusive in dealing with a particular subject. Two of the parallel sessions will focus on psychological and neurological issues that are pertinent to pain specialists. We will dedicate one parallel session to the topic of opiate abuse and diversion and another to new developments in the world of opiates. Another session will review intrathecal therapy. At the end of the presentations, there will be a consensus discussion on the

use of intrathecal therapy in patients with chronic pain. We are very fortunate to have Dr. Samuel Hassenbusch, President of the American Academy of Pain Medicine, participate in this session.

We have not forgotten those pain specialists considering or already involved in private practice. A parallel session will be dedicated to the intricacies of establishing a private pain practice. Topics such as optimizing billing, establishing parameters to meet government compliance, and organization, among others will be discussed.

Dr. Mark Lema, future Vice-President of the ASA, and Past-President of ASRA will present a lecture on the future of pain management in the United States.

And then, there are the cadaver workshops. Based on input after the meeting last year, we doubled the number of workshops and lowered the ratio of participants per cadaver. This should allow those who have signed up for the workshops to have ample time to learn and practice the intricacies of close to 100% of the interventional procedures practiced by an interventional pain physician.

Master classes enable participants to discuss specific cases with the faculty and to benefit from the experience of the proctors and other participants. One master class will be dedicated to the law and the practice of pain.

This year we will also have a breakfast symposium dedicated to Palliative Care Medicine. Although the symposium is free, pre-registration will be required in order to obtain CME credits. The CME credits should be useful to those practicing in states that currently require such a certification to obtain license renewal.

For all these reasons I am very upbeat about this meeting and hope that you will join us for a wonderful experience in Phoenix, Arizona.

Oscar A. de Leon-Casasola, MD  
Program Chair

*President's Message  
continued from page 2*

technology to identify peripheral nerves; what must now be shown is whether it can actually improve block performance and safety. At the very least, ultrasonography is likely to become a valuable tool in our quest to understand needle-to-nerve proximity and its implied relationship to patient safety.

In spite of decreased research funding, increased patient care demands, and diminishing academic output as measured by fewer American submissions to anesthesiology journals, great progress is being made in regional anesthesia. Practitioners of regional anesthesia are justifiably optimistic that their efforts to optimize blocks, identify best practices, and better localize nerves will benefit our current and future patients.

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## Congratulations to the Authors of the BEST OF MEETING ABSTRACTS 29th Annual Spring Meeting

### A1 — Ultrasound localization of the sciatic nerve: A preliminary study

Perlas A, Chan V, McCartney C, Simons M  
*Toronto Western Hospital, Toronto, Ontario, Canada*

### A2 — Prospective comparison of continuous femoral nerve block with nonstimulating catheter placement vs. stimulating catheter-guided placement in volunteers

Salinas F, Neal J, Sueda L, Kopacz D  
*Virginia Mason Medical Center, Seattle, WA*

### A3 — Combination of intraneural injection and high injection pressure leads to severe fascicular injury and neurologic deficits in dogs

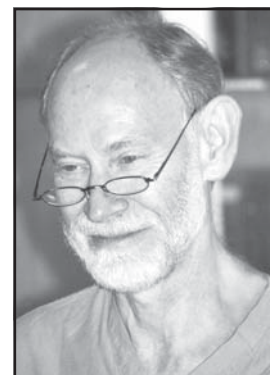
Shah S<sup>1</sup>, Dilberovic F<sup>2</sup>, Mornjakovic Z<sup>2</sup>, Hadzic A<sup>1</sup>  
*St. Luke's-Roosevelt Hospital Center, New York, NY<sup>1</sup>, Medical School of University of Sarajevo, Sarajevo, Bosnia and Herzegovina<sup>2</sup>*

### A4 — Double-blind randomized study of 2-chloroprocaine versus low dose bupivacaine for spinal anesthesia in healthy volunteers

Yoos J, Kopacz D  
*Virginia Mason Medical Center, Seattle, WA*

## Op Ed – August 2004

What do you plan to be doing five years from now and what do you have to do between now and then so you can do it? Some colleagues and I will address these questions when we “retreat” to develop a strategic plan. We will attempt to forecast how many pain doctors there will be, who will belong to societies with a pain focus, how professional needs and activities will evolve in the next five years and what it will be like to practice pain medicine in 2009. Population projections provide some framework for forecasting. One thing is sure – there will be a lot more people around in five years with a higher proportion of older folks. It is likely there will be more people needing treatment for pain and more pain specialists.



James E. Heavner, DVM, PhD

Assumption is made that the growth in number of patients needing treatment for pain will be at a rate equal to or greater than the overall rate of population growth (older folks have more pain than do younger ones?). More patients needing pain therapy, older patients, more pain specialists – just three things to factor into a five year plan. Scientific advances, political and economic issues, and changes in how we teach and learn will also strongly impact societies with a pain focus as well as what the practice of pain medicine will be like in 2009. I encourage you to participate in framing questions and answers to help develop strategic plans.

Mark Lema, MD, PhD, Immediate Past President of ASRA will discuss “The future of pain management in the United States” at the Fall Pain Meeting in November.

## 2004 Carl Koller Research Grants Awarded

The research committee of the American Society of Regional Anesthesia is pleased to announce the selection of two recipients of Carl Koller research grants for 2004.

As most members are aware, the Koller award was modified this past year by the ASRA Board of Directors. The award total was increased to \$50,000 per year available on a biannual basis. The maximum amount made available for a single proposal was \$50,000. Proposals for both clinical and basic science research on local anesthetics and regional anesthesia were accepted. There was an emphasis on providing funds that will hopefully lead to continued research supported by other sources.

With these improvements described above, the committee reviewed 14 proposals for the Koller award. This is by far the greatest number of submissions. The total funds requested for all of the grants exceeded \$400,000.

Based on the Research Committee evaluations, two proposals have been recommended for funding. Guy Weinberg, MD from the Department of Anesthesia at the University of Illinois at Chicago received one award for \$25,000. Dr. Weinberg is the principal investigator in the study *Mechanism of Lipid Rescue from Bupivacaine Cardiac Toxicity*. The goal of this grant is to study the mechanism whereby infusing lipid reverses bupivacaine-

induced cardiotoxicity. Comments from the committee noted this is “a well designed study with significant clinical implications.” And “...the proposed work will yield valuable information on the cardiotoxicity of local anesthetics.”

A second application by Christopher T. Grubb, MD, Department of Anesthesia University of Virginia Health System, was also funded in the amount of \$25,000. Dr. Grubb proposed *Amitriptyline as a Local Anesthetic: Inflammatory Modulation in Humans*. This proposal will examine the anti-inflammatory action of local anesthetics and a drug with local anesthetic properties, amitriptyline, in volunteers. The research committee thought that the “well designed protocol will be able to provide new knowledge on the anti-inflammatory properties of local anesthetics.”

Several of the proposals received a very high priority but insufficient funds were available to support these grants. Our understanding of regional anesthesia and local anesthetics will be advanced by the research in the grant applications. Hopefully, the ASRA will be able to continue and perhaps even increase its award mechanisms in the future.

Timothy J. Brennan, PhD, MD  
*Chair, ASRA Research Committee*

**PRO/CON***continued from page 4*

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**PRO/CON***continued from page 5*

like TNS, but the numbers are inadequate to support statements regarding safety when the feared complication is rare, but very significant. The nature of this issue can perhaps be best placed into perspective by considering the current troubles with lidocaine that became recognized after 75 million anesthetics, or problems with microcatheters, which came to light after 50,000 products were sold. While these are rather extreme examples, a series of 3,000 patients would be required to rule out an incidence greater than 1/1,000 cases using a 95% confidence interval.<sup>26</sup> It is unlikely that a study of this size will be conducted, but it does underscore the need for some additional data collected under the umbrella of IRB approval and written informed consent. Such studies appear to be ongoing, and hopefully will provide data adequate to justify widespread, off-label use of spinal chloroprocaine.

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**How I do it: Ultrasound-guided Infraclavicular Brachial Plexus Block**  
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