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SIG’s Chair Report

2017 IASP-EFIC Global Year Against Pain After Surgery

Multiple activities around the world have been coordinated by IASP through the Acute Pain Special Interest Group (AP SIG) and the European Pain Federation (EFIC). This choice of theme recognizes the importance of acute pain as a global health burden, and new, promising translational research on the chronification of acute pain, such as postoperative pain. The theme was meant to draw attention to acute postoperative pain, chronic postsurgical pain, and the transition between both.

A global schedule of activities was finalized during the 16th World Congress on pain and carried out under the leadership of a joint IASP-EFIC Task Force [see box below for members]. These activities included updating of the 2014 IASP Research Symposium monograph Postoperative Pain: Science and Clinical Practice, edited by Oliver Wilder-Smith, Lars Arendt-Nielsen, David Yarnitsky, and Kris C.P. Vickers. The updated second edition of this monograph has been retitled Pain After Surgery to align it with the theme of the current Global Year Against Pain. Now in press, it has been expanded by its editors (Drs. Carr, Arendt-Nielsen, and Vickers) not only to reflect progress in this fast-moving area but also to highlight the translation of new findings into evidence-based practice.

The Global Year began with the release of 14 Fact Sheets that were posted, along with translations, on the IASP website. The topics ranged from basic mechanisms of postoperative pain to the evaluation of patients first presenting after their postoperative pain had evolved into chronic postsurgical pain. The needs of special populations such as children or older persons were also covered, as were descriptions of pharmacologic and non-pharmacologic therapies. AP SIG members contributed to the Fact Sheets as authors and/or reviewers.

Numerous articles related to pain after surgery have been published and tagged as such in PAIN Reports, thanks to its Editor-in-Chief David Yarnitsky and his capable staff. Further, PAIN Reports has just published the
Proceedings of a Satellite Symposium that took place in Yokohama just before the World Congress, on the topic "Are perioperative opioids obsolete," edited by Drs. Dan Carr and Robert Cohen. A full listing of abstracts and talks from this Satellite Symposium appears below.

The response to these coordinated international efforts has been enthusiastic, with several professional organizations worldwide offering formal declarations of support.

The next milestone in this exciting year will be the joint IASP-EFIC preconference Satellite Symposium “Pain After Surgery” on September 5 in Copenhagen immediately before EFIC’s larger meeting “Pain in Europe X: Bringing Pain Relief to All Patients” on September 6-9. On September 4, an EFIC Symposium will address “Preventing Chronic Postsurgical Pain.”

Fittingly, in keeping with the productive and dynamic efforts of IASP’s Acute Pain SIG and its Task Force on Pain After Surgery, a fresh roster of AP SIG officers was elected in Yokohama upon the expiration of the terms of prior officers. This group of colleagues – some old, some new – includes the founding chair of the AP SIG, Stephan Schug. These individuals are well-positioned to continue “working together for pain relief” on behalf of IASP. As immediate past chair of the AP SIG, I am indebted to all of its volunteers and supporters, particularly Bob Cohen (aided by Esther Pogatzki-Zahn) who raised this newsletter to a standard of excellence that its new coeditor, Babita Ghai, will strive to maintain. Bob also invested huge amounts of time to post video and PowerPoint slides of the speakers at the AP SIG Satellite Symposium in Yokohama and before that, the Buenos Aires AP SIG Satellite Symposium.

Special thanks, too, are due Dan Levin, IASP’s director of publications, for his care and expertise in working with Bob and me to ensure that the range of deliverables--from Fact Sheets, to the AP SIG newsletter, to the updated book--were polished and provided to IASP’s membership in a timely and professional manner.

Dan Carr
Immediate Past Chair, Acute Pain SIG

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**Acute Pain Satellite Symposium at EFIC**

Attend the Satellite Symposium at the 10th Congress of the European Pain Federation EFIC in Copenhagen, Denmark on September 5, 2017. The topic is “Pain After Surgery,” in line with the initiatives of IASP related to 2017 being the Global Year Against Pain After Surgery. The meeting offers a lineup of invited world-renowned speakers in the area of postoperative pain management. View preliminary program.

For details on the pre-Congress satellite meeting and to register, please visit: www.efic2017.kenes.com/scientific-information/pre-congress-satellite-symposia.

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**AP SIG Satellite Symposium Video and Slides Now Available**

The AP SIG held a successful Satellite Symposium, "Are perioperative opioids obsolete?" in conjunction with the 2016 World Congress on Pain in Yokohama. A video link is available for each of the 17 talks. A link to each speaker’s slides in the description accompanies each video. (Click “show more”.) View all videos and presentations.
“Perioperative opioids -- from friend to foe,” the first session, is an introduction and historical overview, presented by Dan Carr.

Opioid adverse effects: synapse to society” is co-moderated by Esther Pogatzki-Zahn and Jane Quinlan. The presenters are Fred Peyerl (“Big data mining frames postoperative opioid issues”), Pamela Macintyre (Opioid-induced ventilatory impairment—what’s the risk and can it be reduced?), Erica Suzan (Acute opioid tolerance/hyperalgesia—is it significant?), and Suellen Walker (Pediatric/developmental considerations). Bernard Schachtel was unable to attend. The content of his presentation (Opioid-induced nausea and vomiting and their prevention) is included in PAIN Reports (“Are perioperative opioids obsolete?” Proceedings of an IASP Acute Pain Special Interest Group Satellite Symposium September 25, 2016, Yokohama, Japan).

“Opioid alternatives (I): behavioral and integrative” is co-moderated by Robert I. Cohen and Adriana Desirer. The presenters are Beth Darnall (My Surgical Success: A perioperative psychological intervention), Cohen (Behavioral and integrative nonopioid alternatives: hypnosis), and Heather Tick (Integrative therapies: the foundation for pain care?).

“Opioid alternatives (II): drugs/devices/delivery” is moderated by Edward Bilsky. Presenters for this session include Stephan Schug (Update on systemic agents—overview of the latest ANZCA scientific evidence report), Esther Pogatzki-Zahn (Dexmedetomidine for perioperative opioid sparing and analgesia), Jacques Chelly (Local anesthetics including extended release and peripheral catheters), William Schmidt (Soluble epoxide hydrolase inhibitors), and Donald Manning (Transcription factor inhibition).

“Making change happen - measurements driving metamorphosis” is co-moderated by Gillian Chumley and Babita Ghai. The presenters are Ruth Zaslansky (PAIN OUT data as agents of change - a case study), Sean Mackey (Perioperative CHOIR: Daily PROMIS integration and initial results), Allen Finley (Does pediatric postop pain control require opioids?), Edward Michna (Postsurgical outpatient opioid analgesia as a community risk), and Debra Gordon (From quality improvement to system change).

Near the end of the last video (16m, 30s), Babita Ghai reintroduces Dan Carr to conclude the symposium.

Robert I. Cohen
Editor, Acute Pain SIG Newsletter

Regional Anesthesia for Patients on Newer Oral Anticoagulants Undergoing Major Orthopedic Surgery: Challenges in Pain Management
Patients undergoing major orthopedic surgery such as knee or hip replacement have a high risk of venous thromboembolism (VTE). Consequently, they routinely receive perioperative or postoperative anticoagulants for thromboprophylaxis. Direct oral anticoagulants (DOACs) such as rivaroxaban, apixaban, and dabigatran have been approved recently in the European Union and the USA for prophylaxis of VTE after hip or knee arthroplasty.

DOACs have important advantages, including oral administration, relative efficacy, faster onset, lack of a need for monitoring, and fewer drug-drug interactions. Neuraxial (spinal and epidural) regional anesthesia is commonly used for such operations.

Careful management of DOACs before neuraxial block and catheter removal, as well as their resumption after catheter removal, is essential for avoiding bleeding complications. Awareness of the pharmacological profile of these agents will help minimize the risk of bleeding complications.

DOACs include thrombin inhibitors (dabigatran) and factor Xa inhibitors (rivaroxaban and apixaban). These three agents are reported to have predictable pharmacodynamics and pharmacokinetics, and rapid onset of action, achieving rapid peak plasma concentration (apixaban, 3-4 hours; rivaroxaban, 2-4 hours; and dabigatran, 0.5-2.0 hours). The metabolism of dabigatran is mainly renal (hence dosage adjustment should be considered in patients with renal impairment), while apixaban and rivaroxaban rely less (roughly one-third) upon renal elimination.

This figure from an fda.gov workshop (p 4) may be helpful.

<table>
<thead>
<tr>
<th>Characteristics of NOACs</th>
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</thead>
<tbody>
<tr>
<td><strong>Mode of action</strong></td>
</tr>
<tr>
<td>Direct inhibition of thrombin</td>
</tr>
<tr>
<td><strong>Bioavailability</strong></td>
</tr>
<tr>
<td>0.03-0.07</td>
</tr>
<tr>
<td><strong>Tmax</strong></td>
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<tr>
<td>1 h (fasted)</td>
</tr>
<tr>
<td><strong>Metabolism</strong></td>
</tr>
<tr>
<td>&lt; 10 % conjugation</td>
</tr>
<tr>
<td><strong>Transporter</strong></td>
</tr>
<tr>
<td>P-gp substrate</td>
</tr>
<tr>
<td><strong>Elimination</strong></td>
</tr>
<tr>
<td>Renal / 80 %</td>
</tr>
<tr>
<td><strong>Elimination half life</strong></td>
</tr>
<tr>
<td>12-17 h</td>
</tr>
<tr>
<td><strong>Dose proportionality</strong></td>
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<tr>
<td>10-400 mg</td>
</tr>
<tr>
<td><strong>BSV (%) CV</strong></td>
</tr>
<tr>
<td>40-60%</td>
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<tr>
<td><strong>WSV (%) CV</strong></td>
</tr>
<tr>
<td>40%</td>
</tr>
<tr>
<td><strong>Accumulation</strong></td>
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<td>100% (BID)</td>
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</tbody>
</table>

Patient-related factors to consider include advanced age (with high frequency of co-medication and with skeletal degeneration, which may increase the technical difficulty of regional anesthesia procedures), renal or hepatic impairment, and postoperative nausea and vomiting (affecting absorption with oral intake). DOACs are relatively predictable in their profile with stable pharmacokinetics and require no bridging before stopping them preoperatively.

Serious complications of neuraxial anesthesia such as spinal or epidural hematoma are rare, making it understandable that current guidelines don’t provide detailed recommendations for the management of DOACs with regard to regional anaesthesia. The dearth of evidence argues for heightened vigilance and a methodical, extended follow-up in the plan of care for each patient with increased risk.

Also, continuous peripheral nerve blocks such as femoral block may be considered as a first-line strategy in patients at risk of bleeding, while epidural or spinal analgesia are second-line or lower. Protocol-based management of interruption and resumption of thromboprophylaxis based on the pharmacokinetic properties of the direct OACs are recommended.
New and Recent PAIN OUT Change-Management Projects

**PAIN OUT** is an international network of clinicians and researchers working to use methods of Continuous Quality Improvement (CQI) to improve pain-related patient-reported outcomes (PROs) after surgery. CQI methods are designed to systematically identify barriers to better outcomes. CQI refers to techniques or tools used to optimize structures of care and improve treatment processes to achieve better outcomes and to do so continuously in incremental steps [1]. Feedback and benchmarking are commonly used CQI methods.

PAIN OUT collaborators have now added another CQI feature to the project’s tool kit in the form of Plan-Do-Study-Act (PDSA) cycles. The PDSA method involves a four-stage cyclic learning approach to seek and then adapt changes aimed at improvement. The Plan stage aims to identify a change for improvement. In the Do stage, data is collected to test the effectiveness of the change. The Study stage involves analysis of the data to examine success of the change. And the Act stage identifies adaptations to the original change and decisions about steps for the next cycle [2].

The order of stages in the PAIN OUT project has been slightly adapted in that the Plan and Do stages have been interchanged. The cycle begins with Do, collecting baseline data, which allows identification of strengths and weaknesses in treatment, which in turn serves as the basis to Plan the change.

The first project, cosponsored by IASP’s International Pain Registry and Developing Countries Working Groups and PAIN OUT, involved staff in eight hospitals and seven middle-resource countries, each carrying out a PDSA-like cycle in one or two surgical wards in their hospital. The project resulted in two principal outcomes: (1) PDSA-like cycles changed processes of care and in some hospitals even improved pain-related PROs, and (2) care providers may work more effectively if they share findings and discuss options for change with other providers in their own country, where the working culture is similar.

PAIN OUT is now leading a new two-year project in 10 hospitals in Mexico City. It is led locally by Ana Garduno and Victor Acosta from the National Institute of Medical Sciences and Nutrition. Participating hospitals work as a group, forming a network. This project is midway to completion. To date, surveyors in these 10 hospitals collected 1,762 datasets from patients who underwent general, orthopedic, thoracic, and gynecological surgery. The data is being assessed for strengths and deficits leading up to a workshop in April 2018, during which the findings will be reviewed and putative changes in management discussed and then implemented. The effects on outcomes and processes will be assessed once again with another round of data collection.

PAIN OUT is now collaborating with the European Pain Federation (EFIC) to expand the CQI framework to eight countries in Europe: Austria, Belgium, France, Italy, Netherlands, Spain, Serbia, and Switzerland. Networks are currently being set up in these countries. Most networks have a national leader who is working to recruit health-care providers treating patients undergoing surgery, anesthesiologists, surgeons, and nurses, to their national network. The results of this project will be shared with each network nationally and will be used by EFIC and PAIN OUT to create an improved tool kit for CQI for use by health-care providers in Europe and elsewhere.

An educational, nonrestrictive grant by Pfizer Inc., Global Independent Grants for Learning & Change, funds the project in Mexico, and Grünenthal GmbH via its CHANGE PAIN initiative, funds the project in Europe.

Ruth Zaslansky, DSc
Scientific Manager at Jena Medical Center, University Hospital Jena, Germany
Perioperative Buprenorphine -- Hindrance or Advantage?

A current challenge in postoperative pain management in the United States is the increasing number of patients presenting for elective or emergent surgery on buprenorphine. This increase is a result of the federal government’s efforts to expand access to and use of buprenorphine for the 2.2 million Americans who struggle with addiction to opioid pain medication or illegal opioids such as heroin.1

Buprenorphine is a semi-synthetic, lipophilic, μ-opioid receptor partial agonist and kappa/delta antagonist. It is used for analgesia or (with a special waiver) for office-based maintenance therapy in persons with opioid substance use disorder. Buprenorphine is often considered a hindrance to the provider of postoperative pain management:2 It binds tightly to the μ-receptor and, as a partial agonist, has long been described as “blocking” the full opioid agonists used post operatively as well as heroin. Although little human data supports the practice, it is not uncommon to discontinue buprenorphine and transition the patient to a full opioid agonist three to five days before elective surgery.

Binding is not synonymous with blocking or activation, and buprenorphine’s biological effects—including analgesia, respiratory depression, and euphoria—each are variable with potentially unique dose-response curves. Patient fears of withdrawal and the loss of relief from dysphoria and craving are major concerns when halting buprenorphine administration perioperatively.2 Additionally, protocols built for acute pain in opioid-naïve patients may not fill the “opioid gap” (buprenorphine has 25 to 100-fold greater potency than morphine).6

Buprenorphine can be titrated to meet the postoperative pain requirements combined with full μ-agonists or, as noted above, replaced with a different opioid.4 Pain control is easier to achieve, and functional recovery is greater, when buprenorphine is maintained throughout the perioperative period compared with switching to a full μ-agonist preoperatively, as described in a unique case comparing the same surgical procedure performed at two different times on the same patient.6 Locally, we have had similar experiences.

We therefore now ask whether continuation of buprenorphine therapy interferes with the ability to achieve satisfactory perioperative analgesia. In fact, we believe buprenorphine may offer unique advantages as a primary analgesic for postoperative analgesia. A blinded clinical trial of 90 patients who were referred for closed-reduction orthopedic surgery reported single-dose buprenorphine (4.5mg/kg sublingually) administration before anesthesia induction associated with better postoperative pain control compared with intravenous morphine (0.2mg/kg intravenously).7 However, as with all opioids, caution and close monitoring is warranted, particularly of ventilatory status. A report of buprenorphine used for acute pain management in opioid-naïve elderly patients described cases of respiratory depression and difficulty with naloxone reversal5. Clearly more study is needed.

Harborview Medical Center, a 413-bed tertiary care hospital in downtown Seattle, is the only designated Level 1 adult and pediatric trauma and burn center in the state of Washington. It also serves as the referral center for Alaska, Montana, and Idaho. As a patient safety-net hospital, Harborview’s mission is to provide care to low-income, uninsured, and vulnerable populations. We estimate that upwards of two-thirds of our daily acute pain service patients are admitted with an active substance use disorder—many including heroin. We are working on interdisciplinary and multimodal clinical care pathways that include management of perioperative buprenorphine as well as methadone to improve inpatient care, safety, and patient engagement with outpatient addiction-
treatment services. This care includes continuation of buprenorphine and, for some, induction on buprenorphine before leaving the hospital.

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References: