

Il controllo del dolore a domicilio

PAOLO GROSSI, M.D.

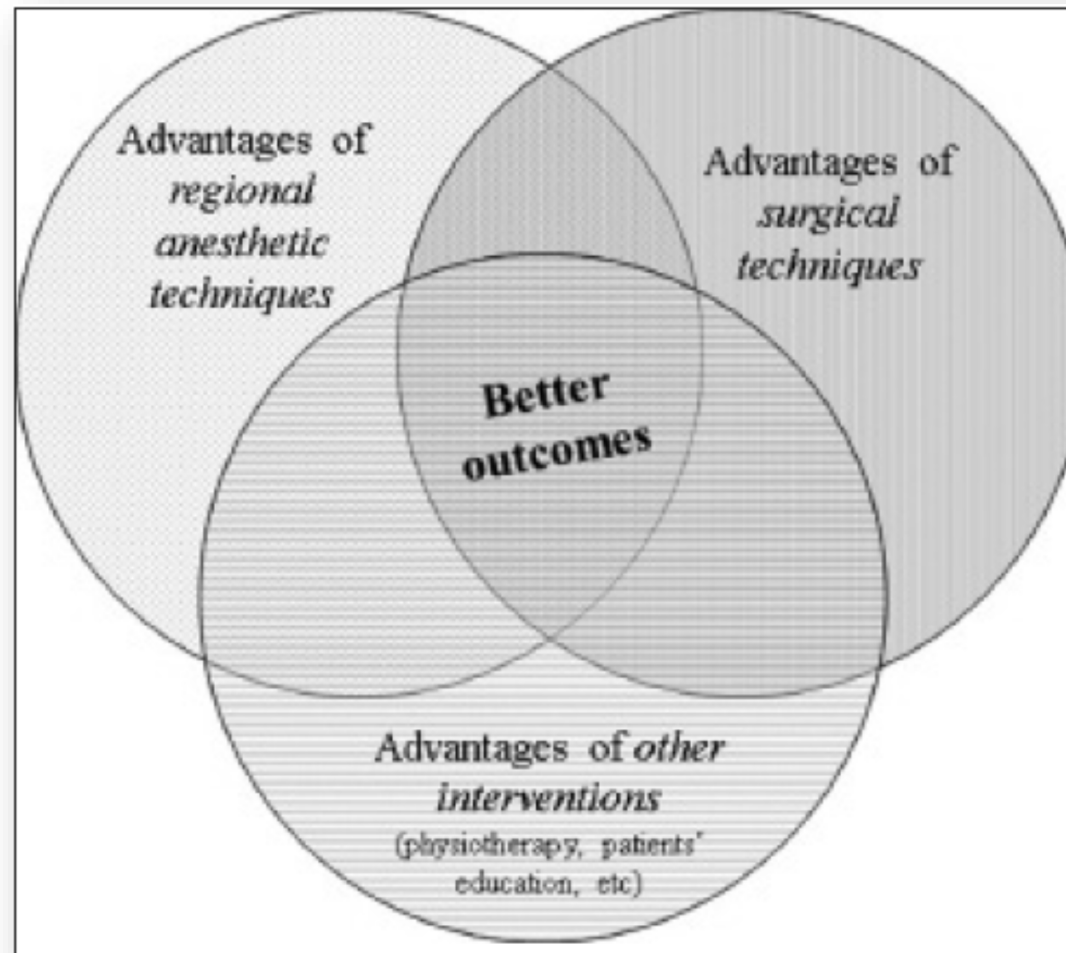
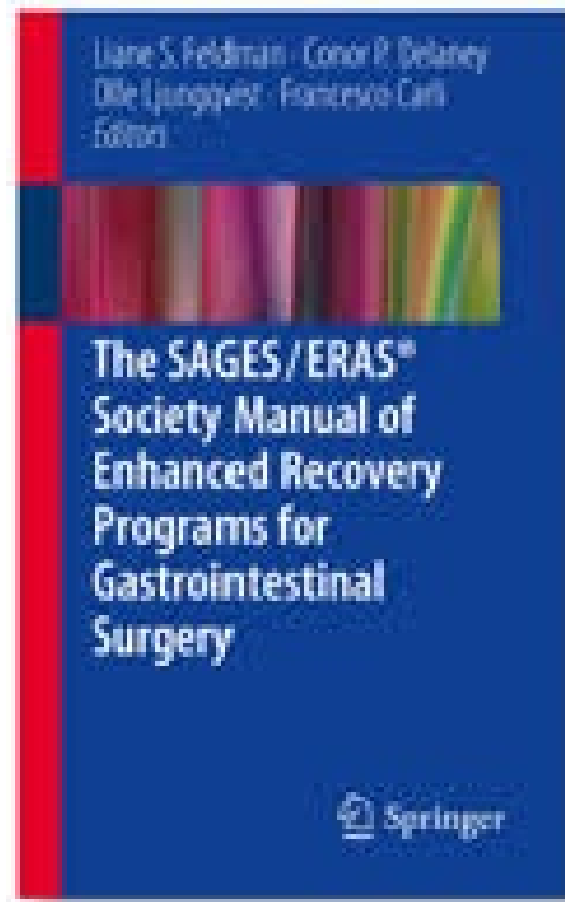
DIRECTOR OF ANESTHESIA INTENSIVE CARE & PAIN TREATMENT DEPARTMENT

ASST CENTRO ORTOPEDICO TRAUMATOLOGICO GAETANO PINI – CTO, MILANO

Regional anesthesia and enhanced recovery after surgery

F. CARLI ¹, A. CLEMENTE ²

¹Department of Anesthesia, McGill University Health Centre, Montreal, Canada; ²Anesthesia and Intensive Care Department, I.R.C.C.S. – I.D.L. “Istituto Dermopatico dell’Immacolata”, Rome, Italy



Enhanced recovery after surgery for primary hip and knee arthroplasty: a review of the evidence

E. M. Soffin* and J. T. YaDeau

Department of Anaesthesiology, Hospital for Special Surgery, Weill Cornell Medical College, 535 East 71st Street, New York, NY 10021, USA

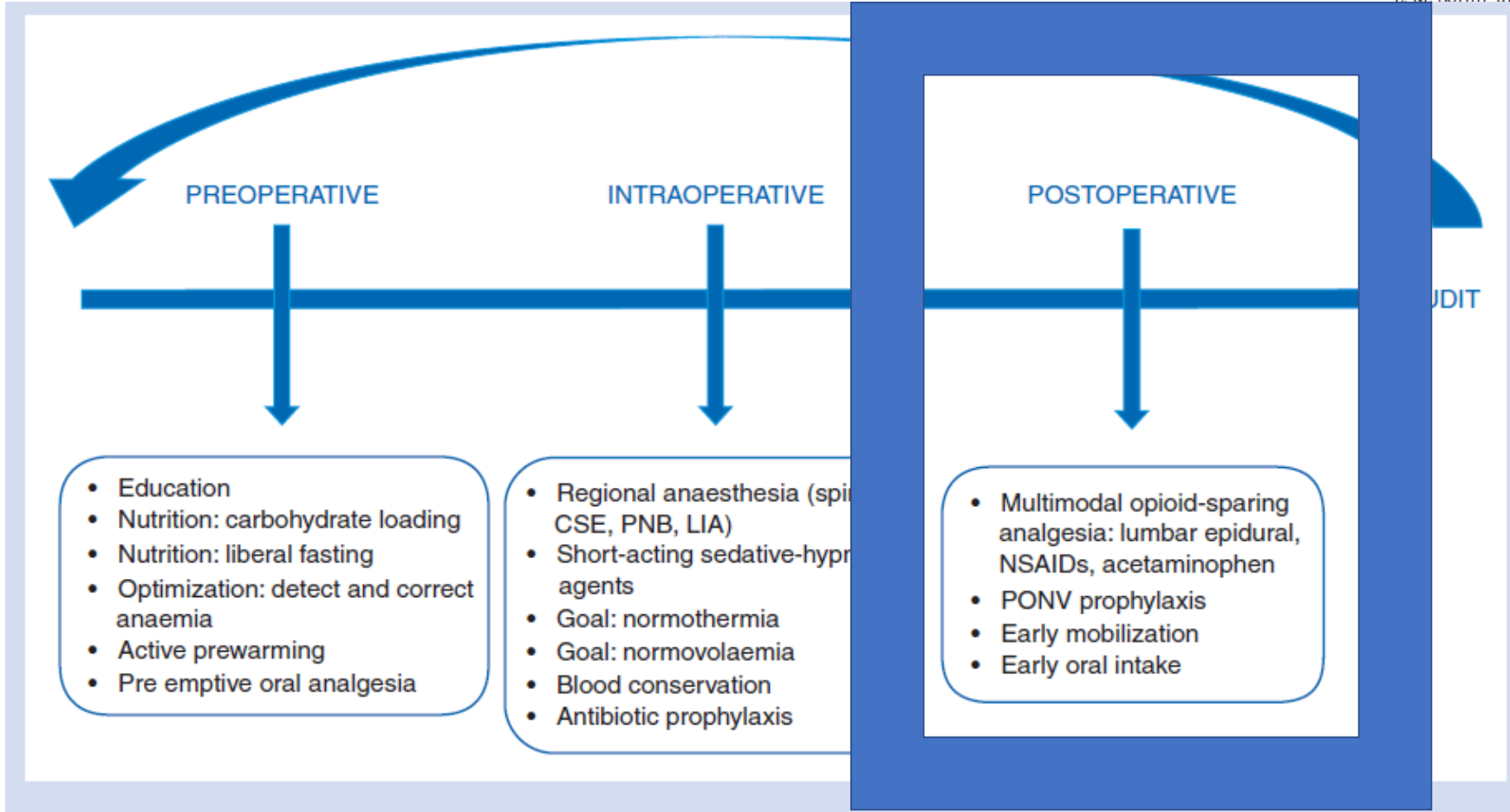


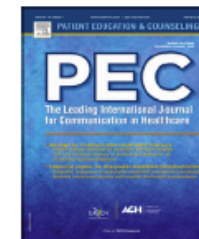
Fig 1 A recommended protocol for ERAS for total joint arthroplasty. This diagram highlights the multimodal, multidisciplinary nature of ERAS protocols. Audit is required and is a key driver of continuous evaluation and refining of the components of care. CSE, combined spinal-epidural; ERAS, enhanced recovery after surgery; LIA, local infiltration anaesthesia; NSAID, non-steroidal anti-inflammatory; PNB, peripheral nerve block; PONV, postoperative nausea and vomiting.



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Patient Education and Counseling

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Short communication

Patient education and engagement in postoperative pain management decreases opioid use following knee replacement surgery

Meghana Yajnik^a, Jonay N. Hill^{a,b}, Oluwatobi O. Hunter^b, Steven K. Howard^{a,b},
 T. Edward Kim^{a,b}, T. Kyle Harrison^{a,b}, Edward R. Mariano^{a,b,*}

^a Department of Anesthesiology, Perioperative and Pain Medicine, MC 5640, 300 Pasteur Drive, Room H3580, Stanford, CA, 94305, USA

^b Anesthesiology and Perioperative Care Service, MC 112A, 3801 Miranda Avenue, Veterans Affairs Palo Alto Health Care System, Palo Alto, CA, 94304, USA

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ABSTRACT

Objective: Effects of patient education on perioperative analgesic utilization are not well defined. We designed a simple pain management educational card for total knee arthroplasty (TKA) patients and retrospectively reviewed clinical data before and after implementation to test the hypothesis that more informed patients will use less opioid.

Methods: With IRB approval, we analyzed clinical data collected perioperatively on all TKA patients one month before (PRE) and one month after (POST) card implementation. The card was designed using a modified Delphi method; the front explained all analgesic medications and the Defense and Veterans Pain Rating Scale was on the back. The primary outcome was total opioid dosage in morphine milligram equivalents (MME) for the first two postoperative days. Secondary outcomes included daily opioid usage, pain scores, ambulation distance, hospital length of stay and use of antiemetics.

Results: There were 20 patients in each group with no differences in baseline characteristics. Total two-day MME [median (10th–90th percentiles)] was 71 (32–285) for PRE and 38 (1–117) for POST ($p=0.001$). There were no other differences.

Conclusion: Educating TKA patients in multimodal pain management using a simple tool decreases opioid usage.

Practice implications: Empowering TKA patients with education can reduce opioid use perioperatively.

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Pain Control After Surgery

Pain control following surgery is a priority for both you and your doctors. This document helps you understand pain management options, describes how to help



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Pain medications after surgery



While at Home:

- Remember to take your pain medication before activity and at bedtime.
- Be sure to get enough rest. If you are having trouble sleeping, talk to your doctor.
- Use pillows to support you when you sleep and when you do your coughing and deep breathing exercises.
- Try using the alternative methods discussed earlier. Heating pads or cold therapy, guided imagery tapes, listening to soft music, changing your position in bed, and massage can help relieve your pain.
- **NOTE:** If you need to have stitches or staples removed and you are still taking pain medications, be sure to have a friend or family member drive you to your Clinic appointment. Commonly, you should not drive or operate equipment if you are taking opioid (narcotic)-containing pain medications.

ANESTHESIOLOGIC AIMS FOR TOTAL KNEE POSTOPERATIVE MANAGEMENT

- Good postoperative pain control
- Motor sparing
- Opioid Sparing
- Early mobilitation
- No PONV
- Early oral intake
- No Postoperative Delirium



Postoperative Recommendations for total knee arthroplasty



Post-operative recommended

- *Systemic analgesia:*
 - Conventional NSAID/COX-2-selective inhibitors (Grade A) + strong opioids (Grade A), titrated to effect (for high intensity pain) + paracetamol (Grade B)
 - Conventional NSAID/COX-2-selective inhibitors (Grade A) +/- weak opioids (Grade B), titrated to effect (for moderate or low intensity pain) + paracetamol (Grade B)
- *Regional analgesia:*
 - Femoral nerve block (Grade A)
- Continuous passive motion (for reasons other than analgesia) (Grade A)
- Intensive rehabilitation (for reasons other than analgesia) (Grade D)

Postoperative Recommendations for total hip arthroplasty



Postoperative

Systemic analgesia

The following are recommended:

- COX-2-selective inhibitors (grade A) or conventional NSAIDs (grade B) (depending on patient risk factors) – in combination with strong or weak opioids, as required for pain intensity
- Strong opioids (grade B) – in combination with non-opioid analgesia for high-intensity pain, preferably administered intravenously by patient-controlled analgesia (grade B) or fixed-interval injection (grade D)
- Weak opioids for moderate- or low-intensity pain (grade A) if conventional NSAIDs or COX-2-selective inhibitors are not sufficient or are contraindicated
- Paracetamol (grade A) – for all pain intensities in combination with conventional NSAIDs or COX-2-selective inhibitors (with or without weak opioids)

Regional analgesia

The following are recommended:

- Peripheral neural block continued after surgery (grade A) in combination with systemic analgesia as required for pain intensity (as above)
- Spinal LA and opioid as a 'single shot' given pre-operatively (grade A) (continuous infusion or repeat bolus spinal is not recommended, grade D), then systemic analgesia as required for pain intensity (as above)
- Epidural analgesia continued after surgery, only in patients at high cardiopulmonary risk, and then systemic analgesia as required for pain intensity (as above)



MOTOR SPARING: SENSITIVE BLOCKS WITH MOTOR SPARING



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The Knee



Continuous adductor canal blockade facilitates increased home discharge and decreased opioid consumption after total knee arthroplasty[☆]

Mitchell R. Klement^{a,b,*}, W. Michael Bullock^c, Brian T. Nickel^a, Alexander J. Lampley^a,
Thorsten M. Seyler^a, Cynthia L. Green^d, Samuel S. Wellman^a, Michael P. Bolognesi^a, Stuart A. Grant^b

^a Department of Orthopedic Surgery, Duke University Medical Center, Durham, NC 27710, USA

^b Orthopaedic Associates of Wisconsin, N15W28300 Golf Road, Pewaukee, WI 53072-4800, USA

^c Department of Anesthesiology, Duke University Medical Center, Durham, NC 27710, USA


^d Department of Biostatistics and Bioinformatics, Duke University Medical Center, Durham, NC 27710, USA

MOTOR SPARING: SENSITIVE BLOCKS WITH MOTOR SPARING

KNEE ARTHROPLASTY



Pain relieve without impairing muscle function after local infiltration anaesthesia in primary knee arthroplasty: a prospective randomized study

H. O. Mayr^{1,2} · W. C. Prall^{2,4} · F. Haasters^{2,4} · S. F. Baumbach⁴ · R. Hube³ · Amelie Stoehr^{2,3} 

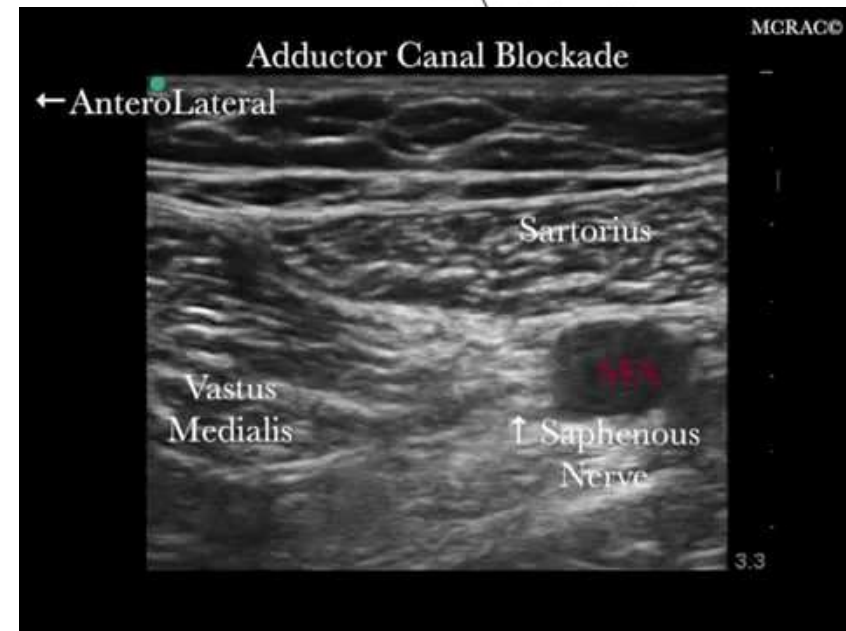
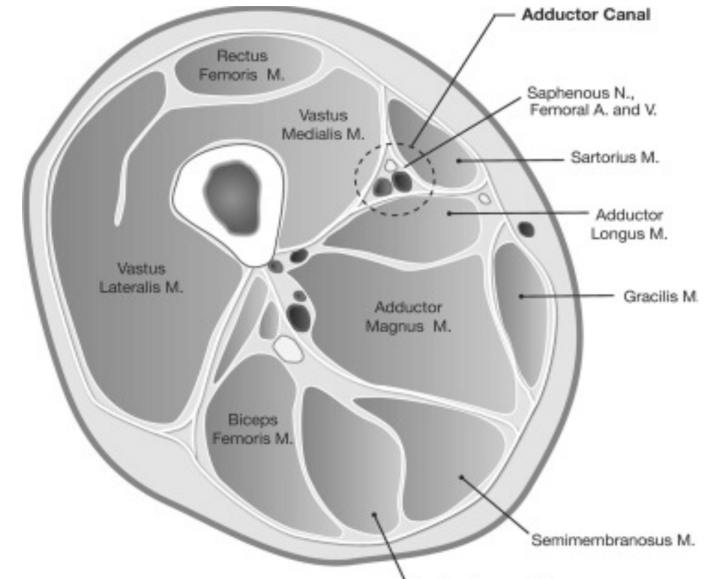
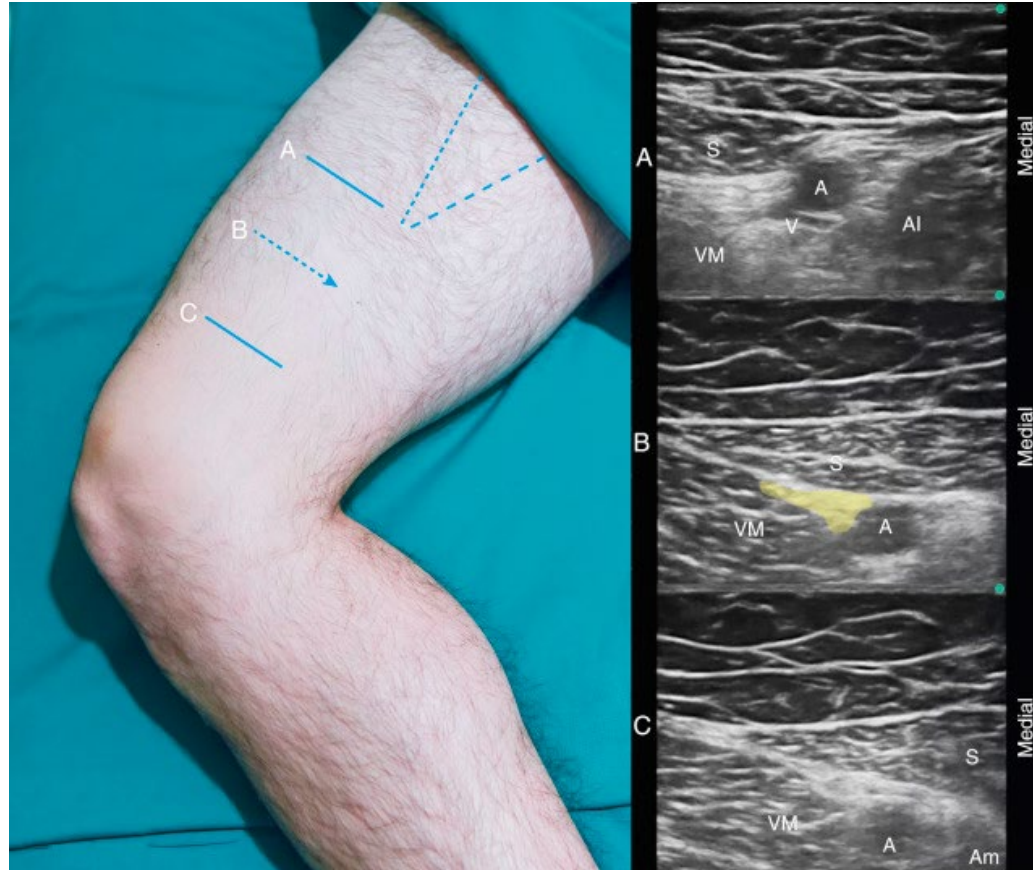
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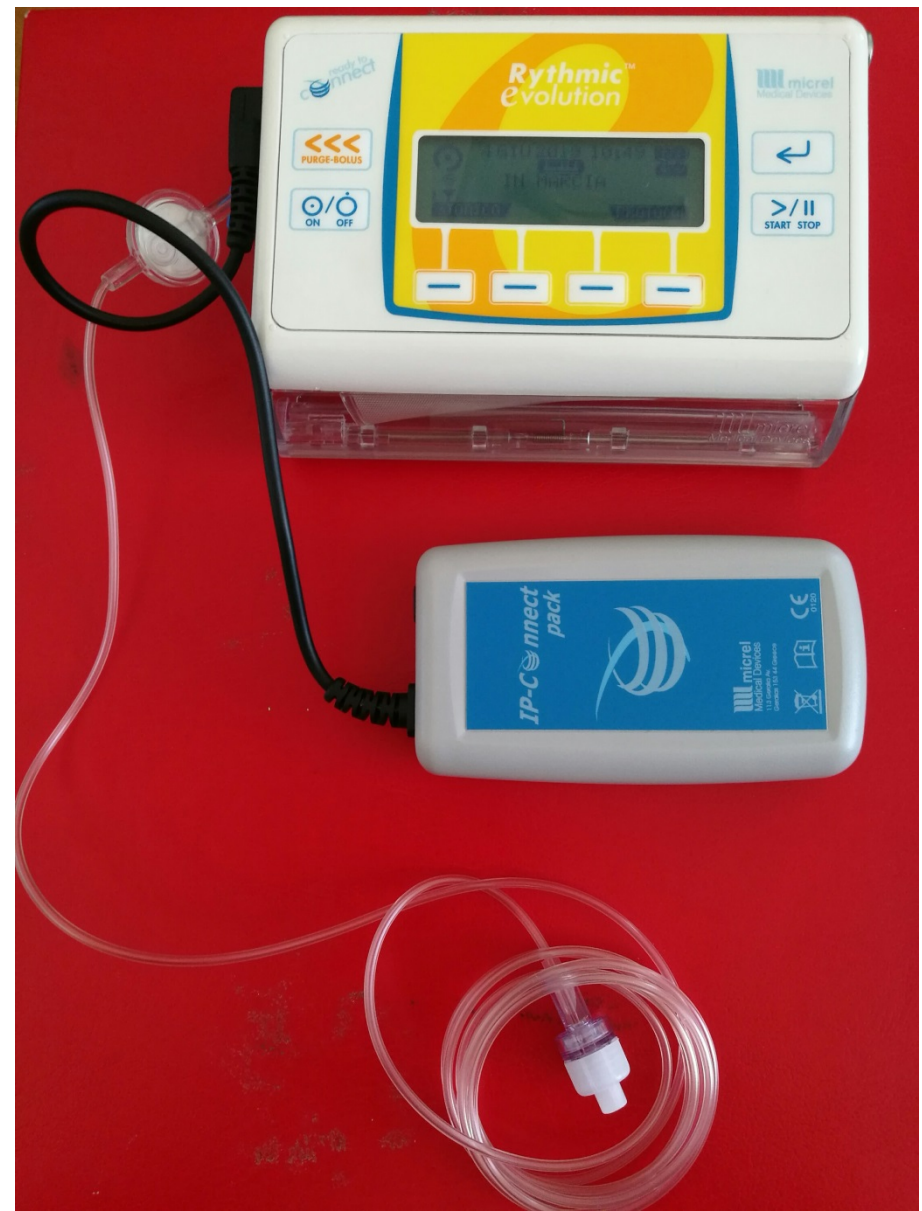
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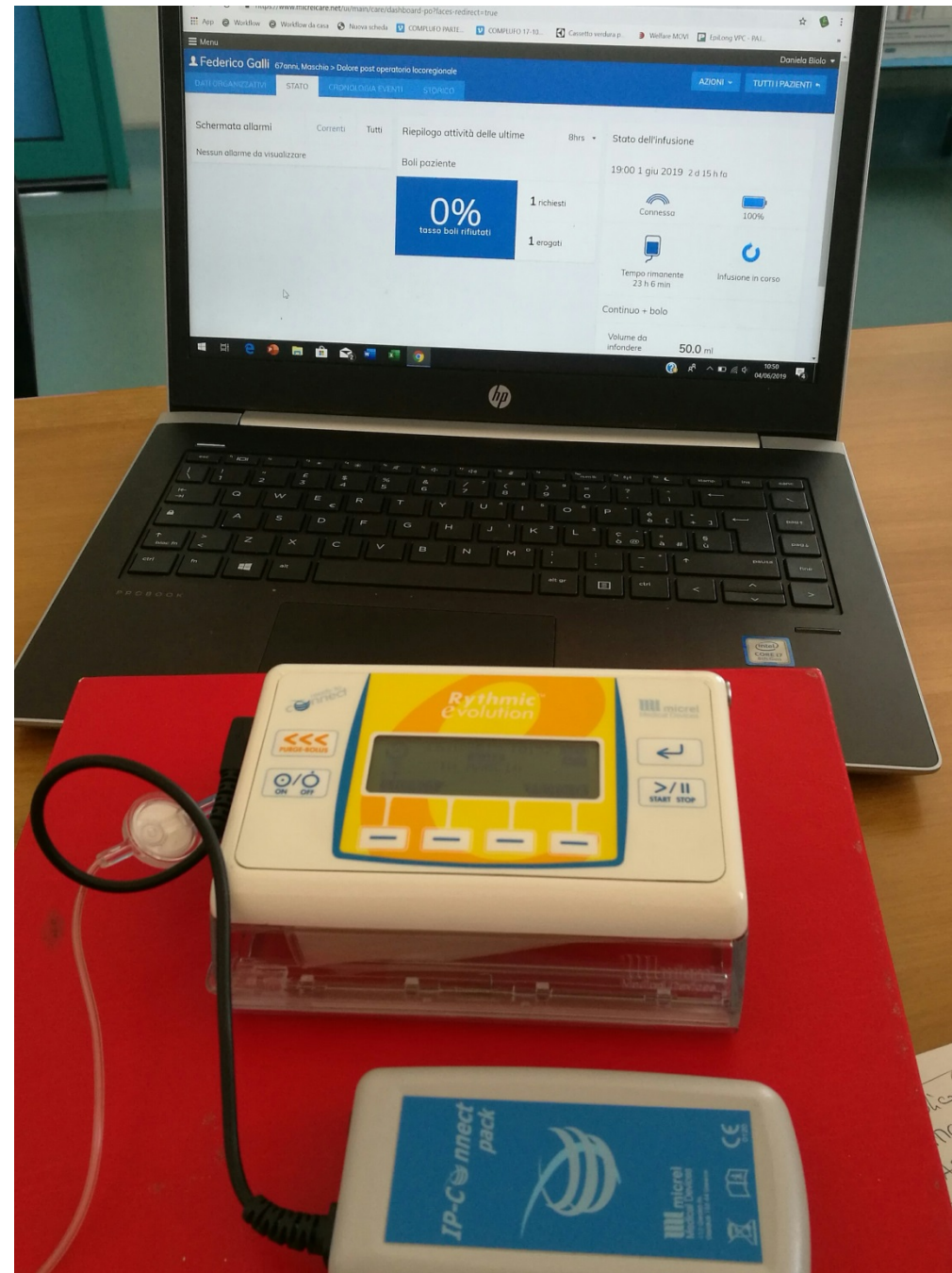
Adductor Canal Block



Single or
continuous
blocks?



Remote control



TECHNICAL NOTE

Open Access



Ultrasound-guided percutaneous peripheral nerve stimulation for analgesia following total knee arthroplasty: a prospective feasibility study

Brian M. Ilfeld^{1*}, Christopher A. Gilmore^{2,3,4}, Stuart A. Grant⁵, Michael P. Bolognesi⁶, Daniel J. Del Gaizo⁷, Amorn Wongsarnpigoon⁸ and Joseph W. Boggs⁸



Fig. 4 An electrical lead connected to a portable stimulator (SPR Therapeutics, LLC, Cleveland, OH; illustration used with permission from Brian M. Ilfeld, MD, MS)

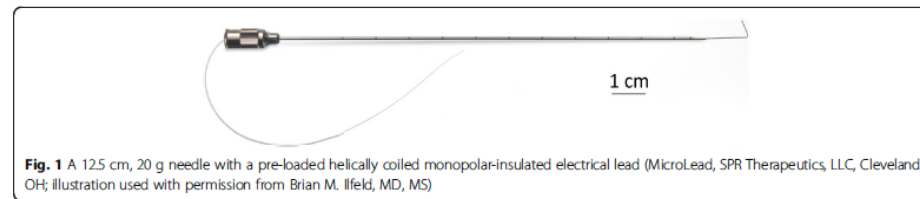


Fig. 1 A 125 cm, 20 g needle with a pre-loaded helically coiled monopolar-insulated electrical lead (MicroLead, SPR Therapeutics, LLC, Cleveland, OH; illustration used with permission from Brian M. Ilfeld, MD, MS)

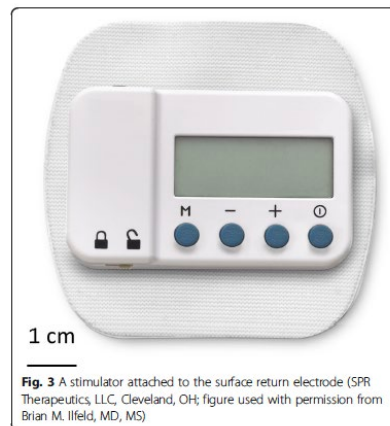


Fig. 3 A stimulator attached to the surface return electrode (SPR Therapeutics, LLC, Cleveland, OH; figure used with permission from Brian M. Ilfeld, MD, MS)

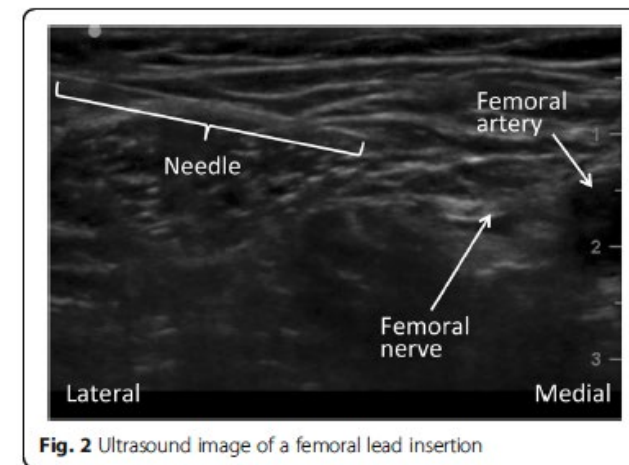


Fig. 2 Ultrasound image of a femoral lead insertion

Regional and Multimodal Analgesia to Reduce Opioid Use After Total Joint Arthroplasty: A Narrative Review

Ellen M. Soffin, MD, PhD · Christopher L. Wu, MD

Pre-operative

- Education & expectation-setting for anticipated pain trajectory, time course of and role of opioids in recovery (starts in the surgeon's office, reinforced during pre-surgical optimization phase by anesthesiologist, internist, and pain management specialist)
- Oral pre-emptive analgesia on the day of surgery: acetaminophen 1000 mg, gabapentin 300 mg (holding area)

Intra-operative

- Neuraxial anesthesia (spinal, or combined spinal-epidural)
- **KNEE:** Peripheral nerve blocks placed: ACB (20 mL 0.25% bupivacaine with 2 mg preservative free dexamethasone); IPACK (10 mL 0.25% bupivacaine) ± surgeon administered LIA
- **HIP:** surgeon administered LIA (20-30 mL 0.5% bupivacaine)
- Sedation: Up to 2 mg midazolam; propofol infusion (50-100 $\mu\text{g}\cdot\text{kg}\cdot\text{min}^{-1}$)
- Multimodal analgesia: ketamine infusion (0.1-0.3 $\text{mg}\cdot\text{kg}^{-1}$) ketorolac 15 or 30 mg during skin closure (dose adjusted for patient risk factors)
- PONV prophylaxis: ondansetron (4 mg), dexamethasone (4 mg)

Post-operative

- Ongoing multimodal analgesia: regularly scheduled acetaminophen (1000 mg every 6 hours), NSAID (ketorolac 15 or 30 mg every 8 hours, and then oral NSAID, ex: meloxicam 7.5 or 15 mg daily), gabapentin (300-600 mg every 8 hours); dextromethorphan 30-60 mg every 8 hours.
- **KNEE:** oxycodone 5/10/15 mg for mild/moderate/severe pain, PRN
- **HIP:** tramadol 50-100 mg for moderate/severe pain, PRN
- Discharge prescriptions for opioid medications according to standardized, service-specific guidelines [88]
- Ongoing education and reinforcement regarding the role and duration of opioid therapy in recovery



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Proceedings of AAHKS

Large Opioid Prescriptions Are Unnecessary After Total Joint Arthroplasty: A Randomized Controlled Trial

Charles P. Hannon, MD ^a, Tyler E. Calkins, BS ^a, Jefferson Li, BS ^a, Chris Culvern, MS ^a, Brian Darrith, MD ^a, Denis Nam, MD, MS ^a, Tad L. Gerlinger, MD ^a, Asokumar Buvanendran, MD ^b, Craig J. Della Valle, MD ^{a,*}

^a Adult Reconstruction Division, Department of Orthopaedic Surgery, Rush University Medical Center, Chicago, IL

^b Department of Anesthesiology, Rush University Medical Center, Chicago, IL

C.P. Hannon et al. / The Journal of Arthroplasty xxx (2019) 1–7

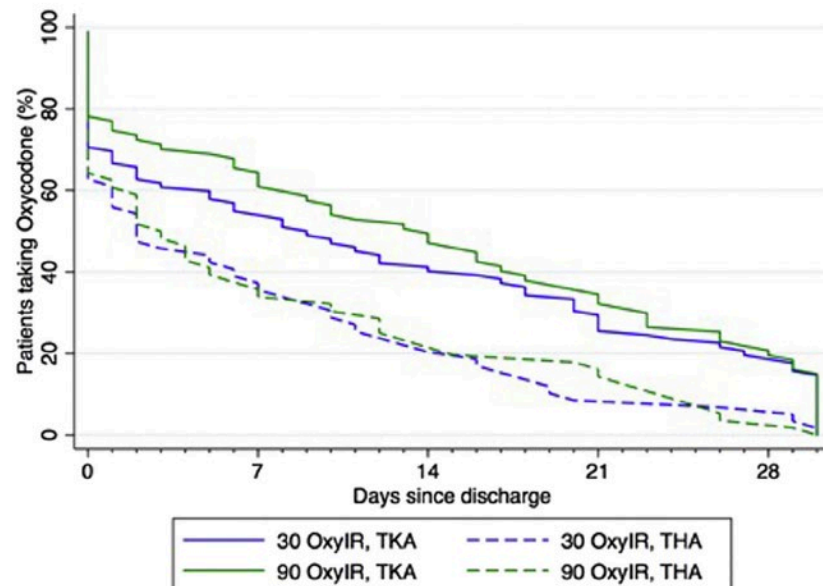
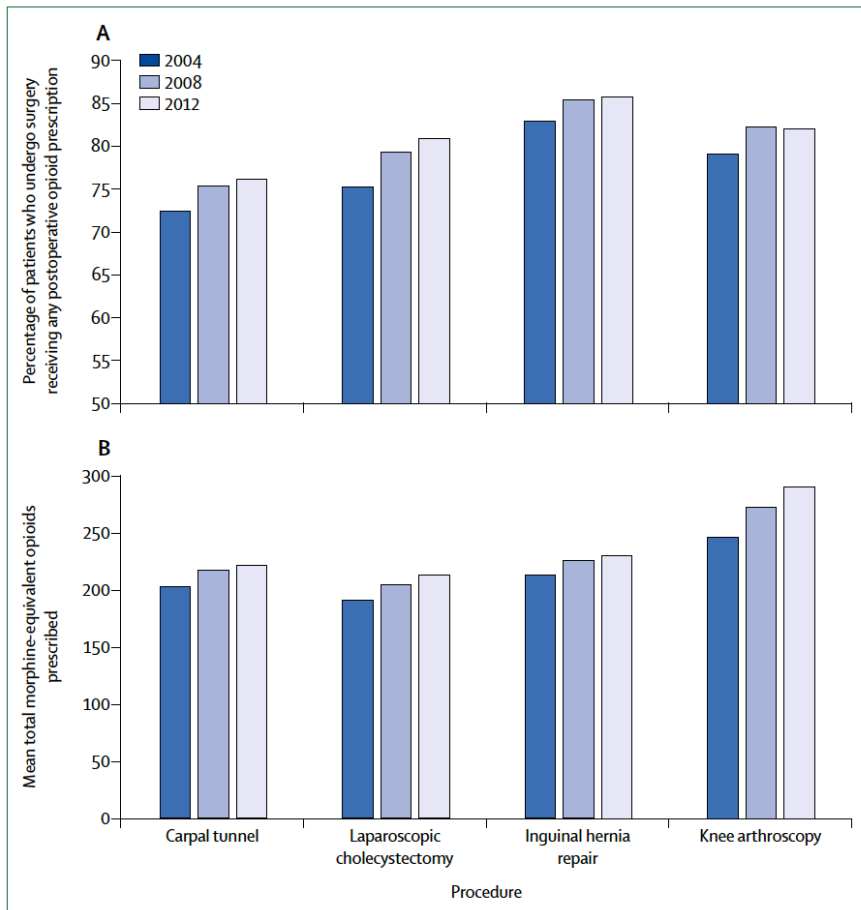


Fig. 2. Percent of patients taking oxycodone immediate release by days after discharge. TKA, total knee arthroplasty; THA, total hip arthroplasty.

Postoperative pain management and opioids 2

Inappropriate opioid prescription after surgery

Mark D Neuman, Brian T Bateman, Hannah Wunsch



Panel 2: Selected risk factors associated with prolonged opioid use after surgery*

System risk factors

- Type of surgery^{63,65}
- High dosage of prescriptions⁷⁰
- Longer duration of initial prescription⁷⁰

Patient risk factors

- Age⁶⁵ (aged 50 years or older)
- Sex⁶⁵ (male)
- Household income⁶³ (lower)
- Specific comorbidities^{63-65,71} (diabetes; heart failure; pulmonary disease)
- Mood disorders^{65,71} (depression)
- Preoperative opioid use⁷²
- Early postoperative opioid use⁶²
- Specific preoperative medications^{63,65,66} (benzodiazepines; antidepressants; ACE inhibitors)
- Preoperative history of drug abuse^{64,66}
- Preoperative tobacco use^{64,66}
- Preoperative pain disorders^{64,66}

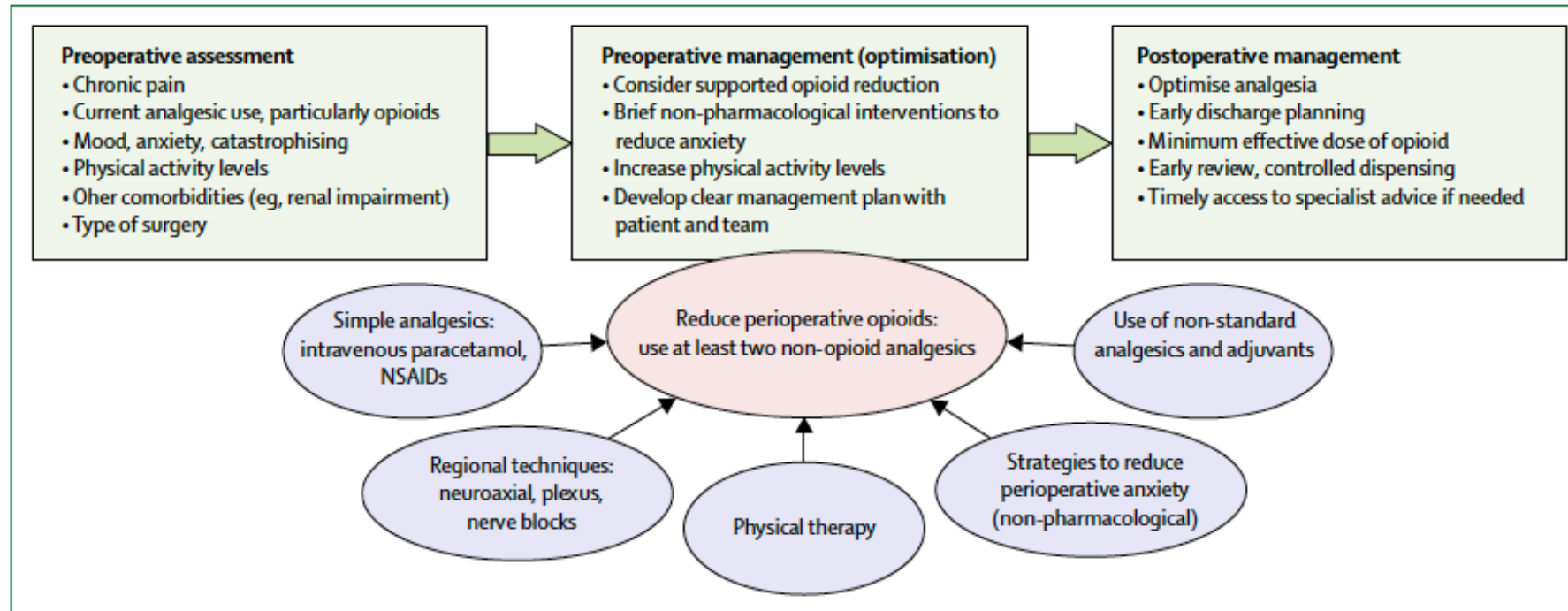
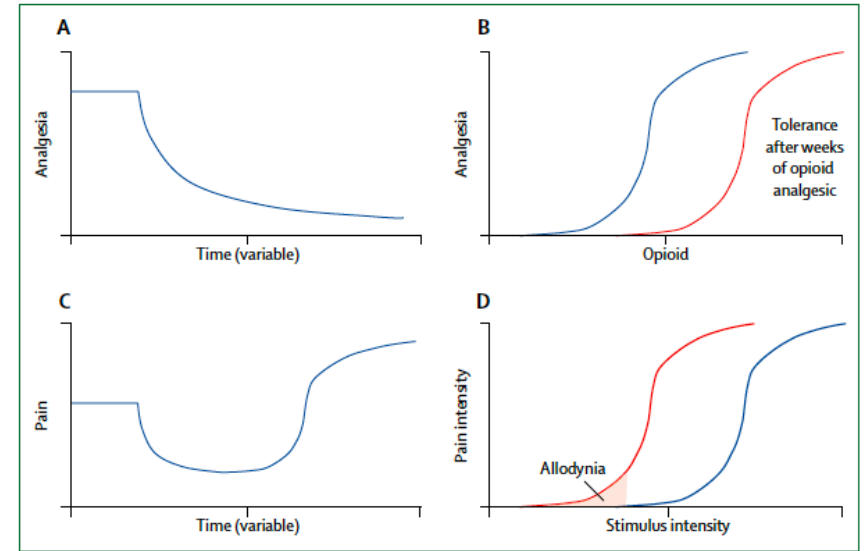
*Variable definitions for prolonged opioid use—see specific references.



Postoperative pain management and opioids 3

Perioperative opioid analgesia—when is enough too much? A review of opioid-induced tolerance and hyperalgesia

Lesley A Colvin, Fiona Bull, Tim G Hales



FDA News Release

FDA announces enhanced warnings for immediate-release opioid pain medications related to risks of misuse, abuse, addiction, overdose and death

New safety warnings also added to all prescription opioid medications to inform prescribers and patients of additional risks related to opioid use

Opioid Risk Tool (ORT)

Mark each box that applies		Female	Male
1.	Family Hx of substance abuse		
	Alcohol	<input type="checkbox"/> 1	<input type="checkbox"/> 3
	Illegal drugs	<input type="checkbox"/> 2	<input type="checkbox"/> 3
	Prescription drugs	<input type="checkbox"/> 4	<input type="checkbox"/> 4
2.	Personal Hx of substance abuse		
	Alcohol	<input type="checkbox"/> 3	<input type="checkbox"/> 3
	Illegal drugs	<input type="checkbox"/> 4	<input type="checkbox"/> 4
	Prescription drugs	<input type="checkbox"/> 5	<input type="checkbox"/> 5
3.	Age between 16 & 45 yrs	<input type="checkbox"/> 1	<input type="checkbox"/> 1
4.	Hx of preadolescent sexual abuse	<input type="checkbox"/> 3	<input type="checkbox"/> 0
5.	Psychologic disease		
	ADD, OCD, bipolar, schizophrenia	<input type="checkbox"/> 2	<input type="checkbox"/> 2
	Depression	<input type="checkbox"/> 1	<input type="checkbox"/> 1

Scoring Totals:

Administer

On initial visit

Prior to opioid therapy

Scoring (risk)

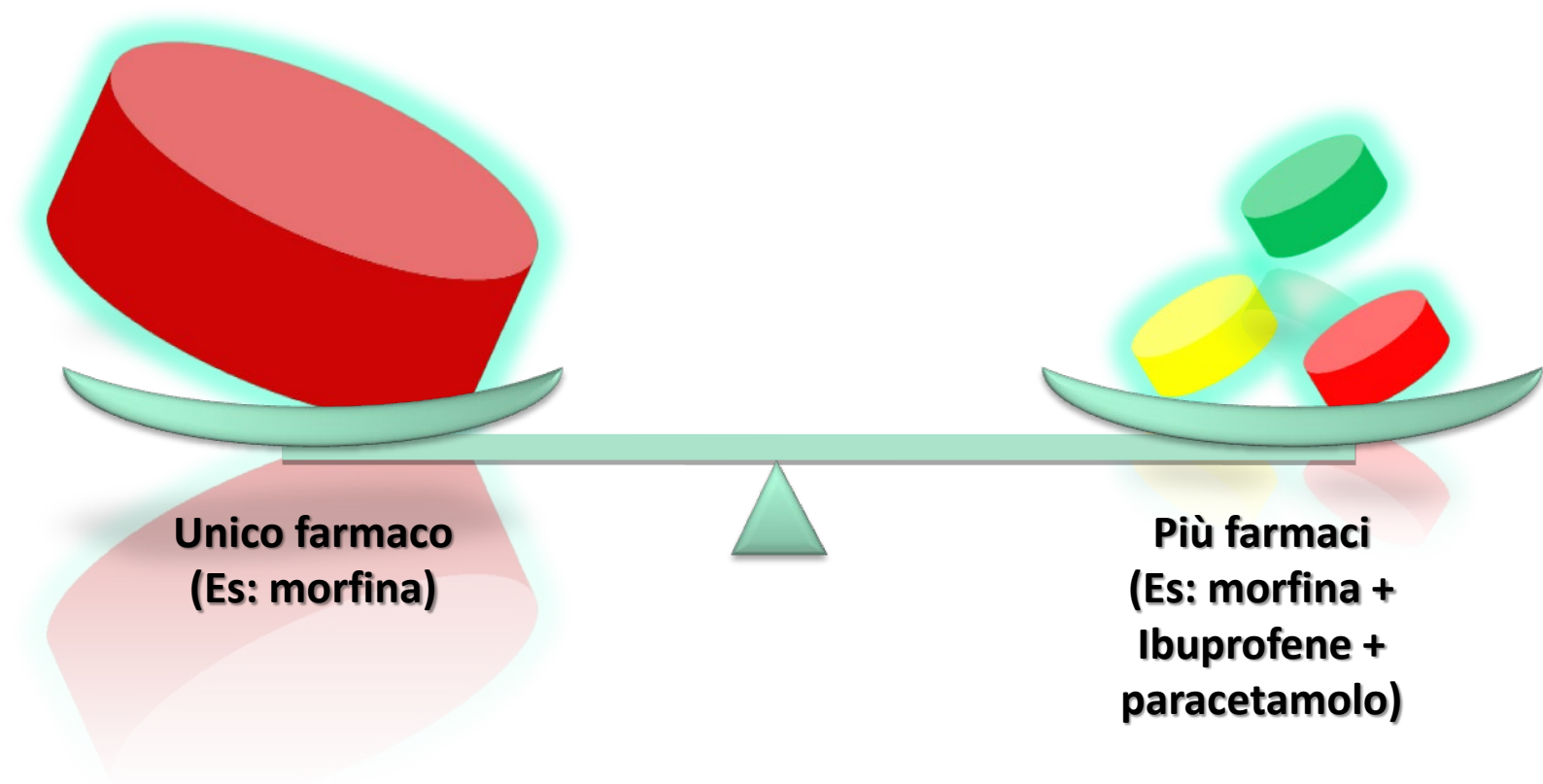
0-3: low

4-7: moderate

≥8: high

Class	Examples	ADR Risks	Comments
Opioids	Morphine Hydromorphone Fentanyl	<ul style="list-style-type: none"> • Sedation • Constipation • Nausea / Vomiting • Dizziness 	<ul style="list-style-type: none"> • Sedation may impair postoperative rehabilitation • Constipation may affect time to discharge
NSAIDs (injectable)	Ketorolac Ibuprofen	<ul style="list-style-type: none"> • GI bleeds • Nephrotoxicity 	<ul style="list-style-type: none"> • May affect wound / bone healing
NSAIDs (oral, nonselective)	Ibuprofen Naproxen Diclofenac	<ul style="list-style-type: none"> • GI bleeds • Nephrotoxicity • Nausea / Vomiting 	<ul style="list-style-type: none"> • May affect wound / bone healing
NSAIDs (oral, selective)	Celecoxib	<ul style="list-style-type: none"> • Nephrotoxicity • Nausea / Vomiting 	<ul style="list-style-type: none"> • May affect wound / bone healing
Acetaminophen	Acetaminophen (oral and injectable)	<ul style="list-style-type: none"> • Hepatotoxicity at high doses 	<ul style="list-style-type: none"> • No effect on bleeding times • Well tolerated
Gabapentinoids	Gabapentin Pregabalin	<ul style="list-style-type: none"> • Dizziness • Sedation 	<ul style="list-style-type: none"> • Helpful with neuropathic pain

Strategie analgesiche



E' corretto privilegiare l'approccio POLIFARMACOLOGICO sfruttando l'effetto sinergico di più farmaci a dosaggio ridotto per ridurre l'insorgenza di effetti collaterali.

PAIN

Randomized clinical trial of dexketoprofen/tramadol 25 mg/75 mg in moderate-to-severe pain after total hip arthroplasty

H. J. McQuay^{1,*}, R. A. Moore², A. Berta³, O. Gainutdinovs⁴, B. Fülesdi⁵, N. Porvaneckas⁶, S. Petronis⁷, M. Mitkovic⁸, L. Bucsi⁹, L. Samson¹⁰, V. Zegunis¹¹, M. L. Ankin¹², M. Bertolotti¹³, B. Pizà-Vallespir¹⁴, S. Cuadripani¹⁴, M. P. Contini¹³ and A. Nizzardo¹³

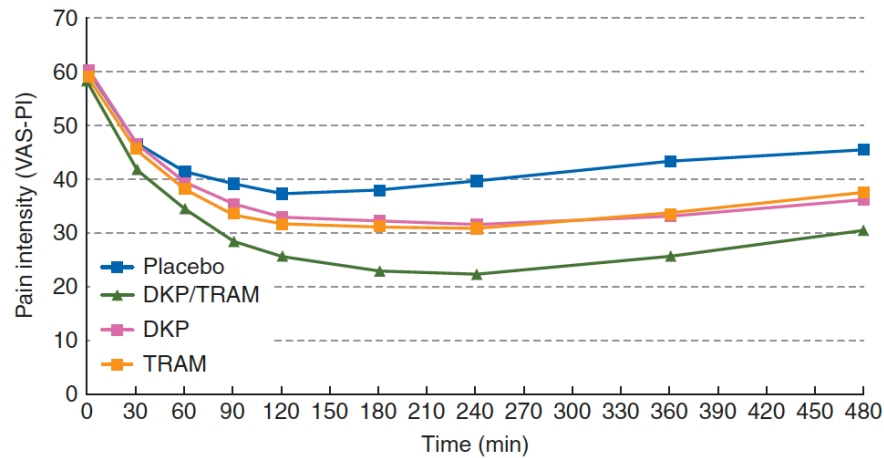


Fig 2 Observed PI-VAS at rest for the single-dose phase (first 8 h) by treatment (all randomized patients). DKP, dexketoprofen trometamol 25 mg; DKP/TRAM, dexketoprofen trometamol/tramadol hydrochloride 25 mg/75 mg; PI, pain intensity; PI-VAS, pain intensity visual analog scale; TRAM, tramadol hydrochloride 100 mg; VAS, visual analog scale.

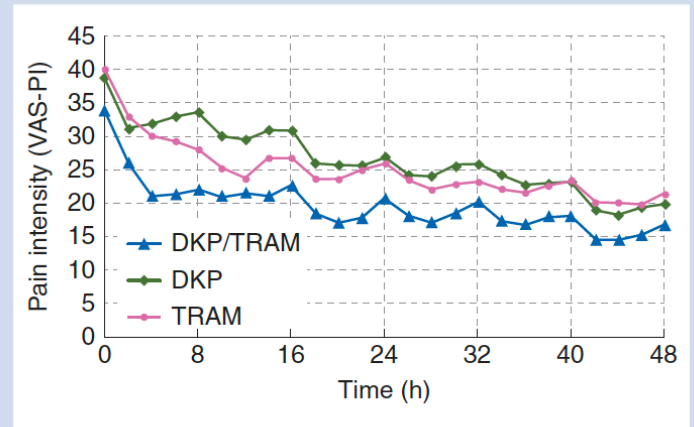


Fig 3 Observed PI-VAS at rest during the first 48 h of the multiple-dose phase by treatment (all randomized patients). DKP, dexketoprofen trometamol 25 mg; DKP/TRAM, dexketoprofen trometamol/tramadol hydrochloride 25 mg/75 mg; PI, pain intensity; PI-VAS, pain intensity visual analog scale; TRAM, tramadol hydrochloride 100 mg; VAS, visual analog scale.

CONCLUSION:

- Tailored pain treatment
- Multimodal analgesia
- Informed patient
- Opioids alone are not the solution
- Loco-regional analgesia

