Pooperační analgezie v kontextu ERAS

D. MACH

ARO NOVÉ MĚSTO NA MORAVĚ

TOTO SDĚLENÍ NEVYTVÁŘÍ KONFLIKT ZÁJMŮ

Kam svým sdělením mířím

Zamyslet se nad smysluplností konceptu ERAS

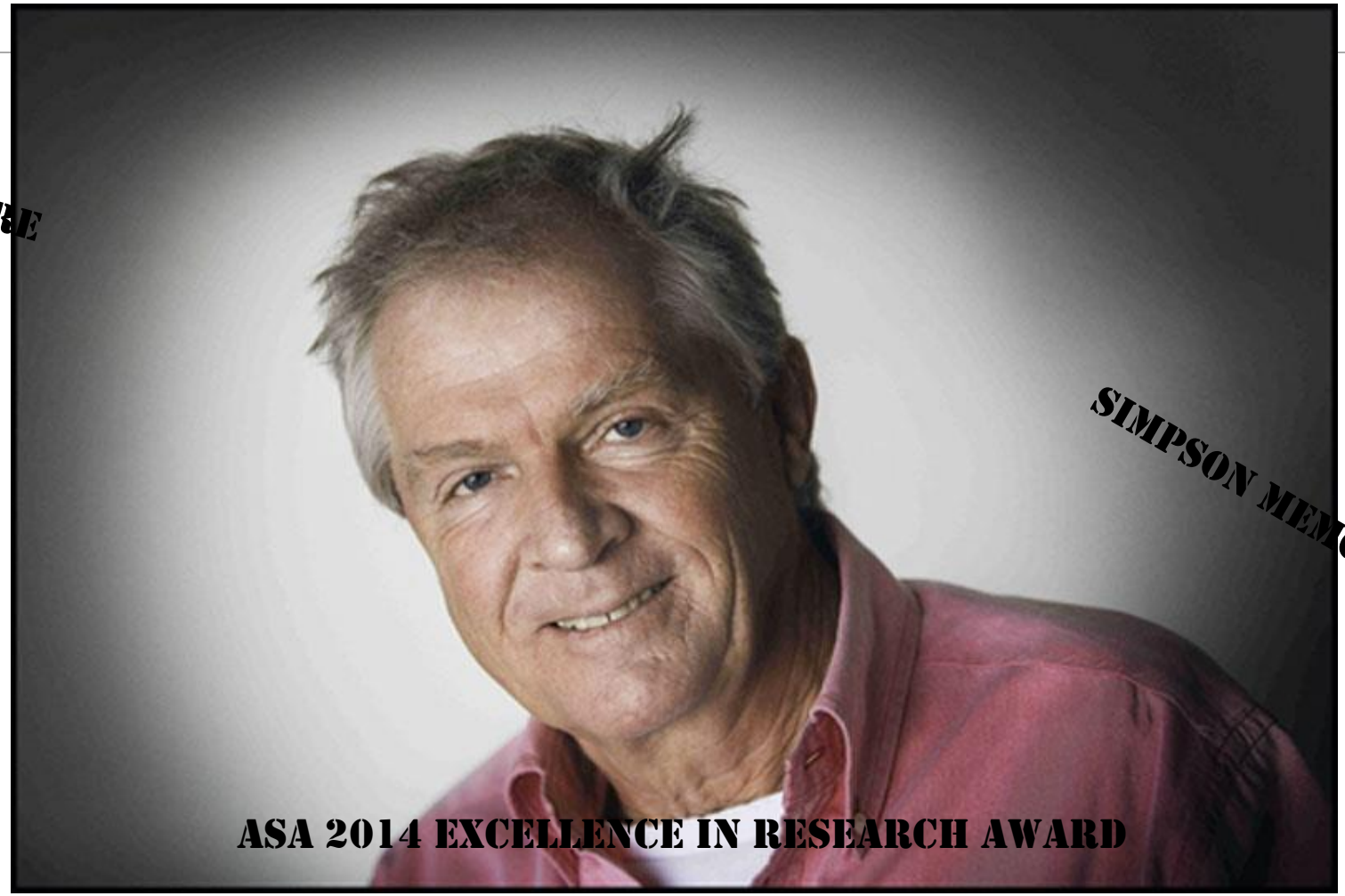
Zamyslet se nad rolí analgezie v konceptu ERAS

Co znamená plán ušitý na míru z pohledu analgezie

Henrik Kehlet, M.D., Ph.D., University of Copenhagen (Denmark)

CARL KOLLER LECTURE
ESRA 2003

BONICA LECTURE



SIMPSON MEMORIAL LECTURE

LABAT LECTURE

Henrik Kehlet, M.D., Ph.D., University of Copenhagen (Denmark)

„From Surgical Stress Response to Multimodal Analgesia“

„Preemptive Analgesia and Transition from Acute to Chronic Pain“

„Fast-track Surgery“

„Establishing Prospective Patient Databases“

PROSPECT

Co znamená ERAS?

Individuální plán péče pro pacienta (ušitý na míru)

Vycházející s poznatků EBM

Má ambice zlepšit průběh stonání snížením pooperačních komplikací, zlepšením pacientského komfortu a zkrácením doby pobytu v nemocnici.

U vybraných typů výkonů se prokazovalo zkrácení doby o 30%, snížení pooperačních komplikací až o 50%

Je ERAS něco jiného než plán péče (Care Plan)?

Problém s plánem péče začíná když

Individuální plán péče pro pacienta (ušitý na míru) má každý člen týmu taky individuální

Vycházející s poznatků EBM zohledňující jen jednotlivé aspekty péče (péče o ránu, o anastomosu…a ne o pacienta)

Pak má ambice zlepšit kvalitu oborově specificky poskytované péče

…ale pacientský OUTCOME???

Best Practice & Research Clinical Anaesthesiology

Available online 25 July 2019

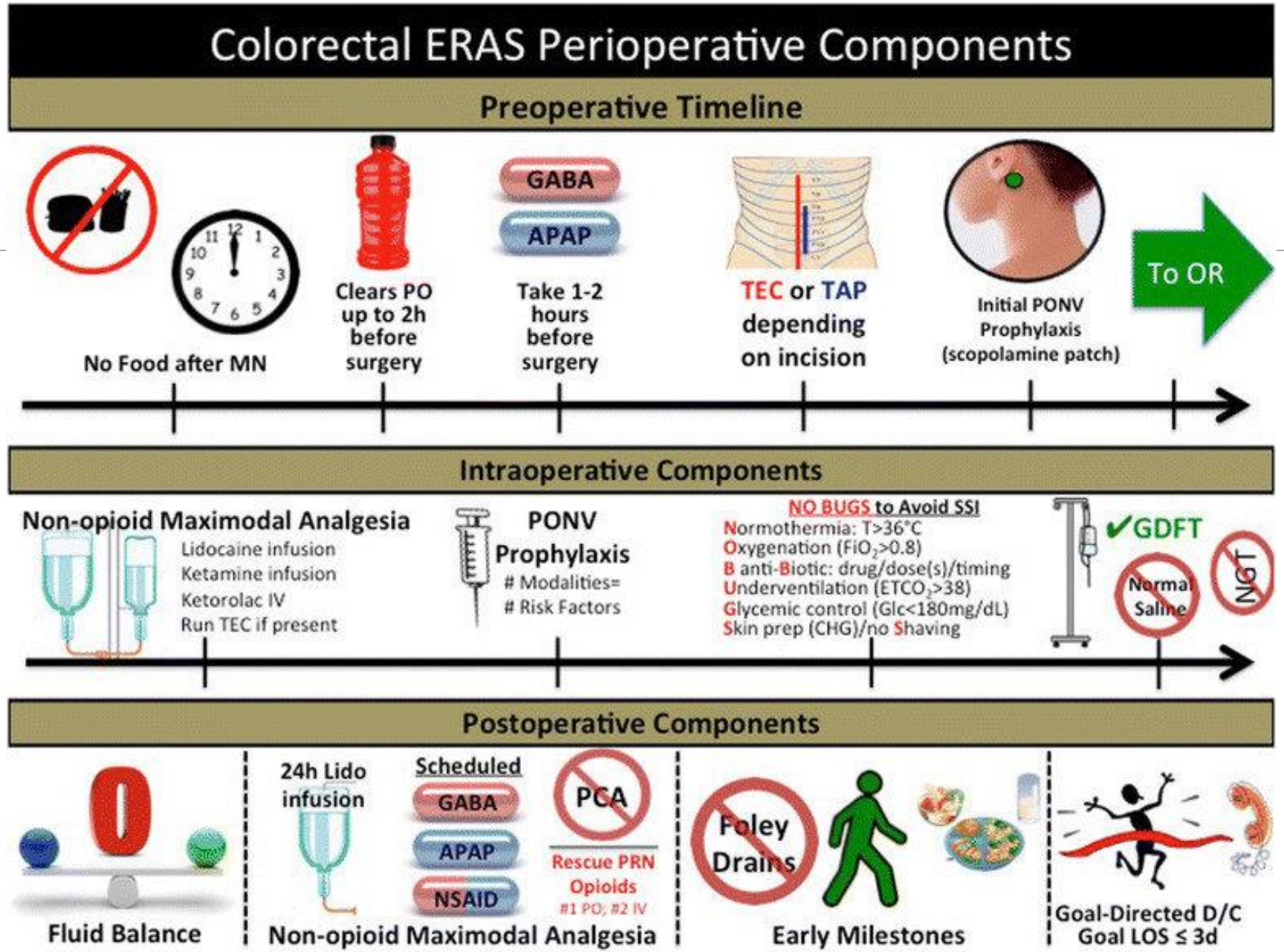
In Press, Corrected Proof

Postoperative pain management in the era of ERAS: An overview

Girish P. Joshi (Professor of Anesthesiology and Pain Management) [a], Henrik Kehlet MD, PhD, FACS (Hon), Professor [b]

[a] University of Texas Southwestern Medical Center, 5323 Harry Hines Blvd, Dallas, TX 75390-9068, USA

[b] Section of Surgical Pathophysiology 7621, Rigshospitalet, Blegdamsvej 9, DK-2100 Copenhagen, Denmark


Colorectal ERAS Perioperative Components
Preoperative Timeline
No Food after MN
Clears PO up to 2h before surgery
GABA
APAP
Take 1-2 hours before surgery
TEC or TAP depending on incision
Initial PONV Prophylaxis (scopolamine patch)
To OR
Intraoperative Components
Non-opioid Maximodal Analgesia
Lidocaine infusion
Ketamine infusion
Ketorolac IV
Run TEC if present
PONV Prophylaxis
Modalities=
Risk Factors
NO BUGS to Avoid SSI
Normothermia: T>36°C
Oxygenation (FiO_2>0.8)
B anti-Biotic: drug/dose(s)/timing
Underventilation ($ETCO_2$>38)
Glycemic control (Glc<180mg/dL)
Skin prep (CHG)/no Shaving
✔GDFT
Normal Saline
NoT
Postoperative Components
Fluid Balance
24h Lido infusion
Scheduled
GABA
APAP
NSAID
PCA
Rescue PRN Opioids
#1 PO; #2 IV
Non-opioid Maximodal Analgesia
Foley
Drains
Early Milestones
Goal-Directed D/C
Goal LOS ≤ 3d

Klíčové složky ERAS

……

……

……

Multimodální analgezie

……

……

……

Analgezie v konceptu ERAS

Pooperační analgezie v rámci konceptu ERAS se zaměřuje na multimodální, individualizovaný přístup k potlačení bolesti pomocí kombinace různých léků a technik, s cílem minimalizovat pooperační komplikace, podpořit rychlé zotavení pacienta a zkrátit dobu hospitalizace.

Principy a cíle:

Multimodální přístup:

Místo spoléhání se na jedinou metodu se kombinuje více přístupů k dosažení optimálního účinku s minimálními vedlejšími efekty.

Individualizace:

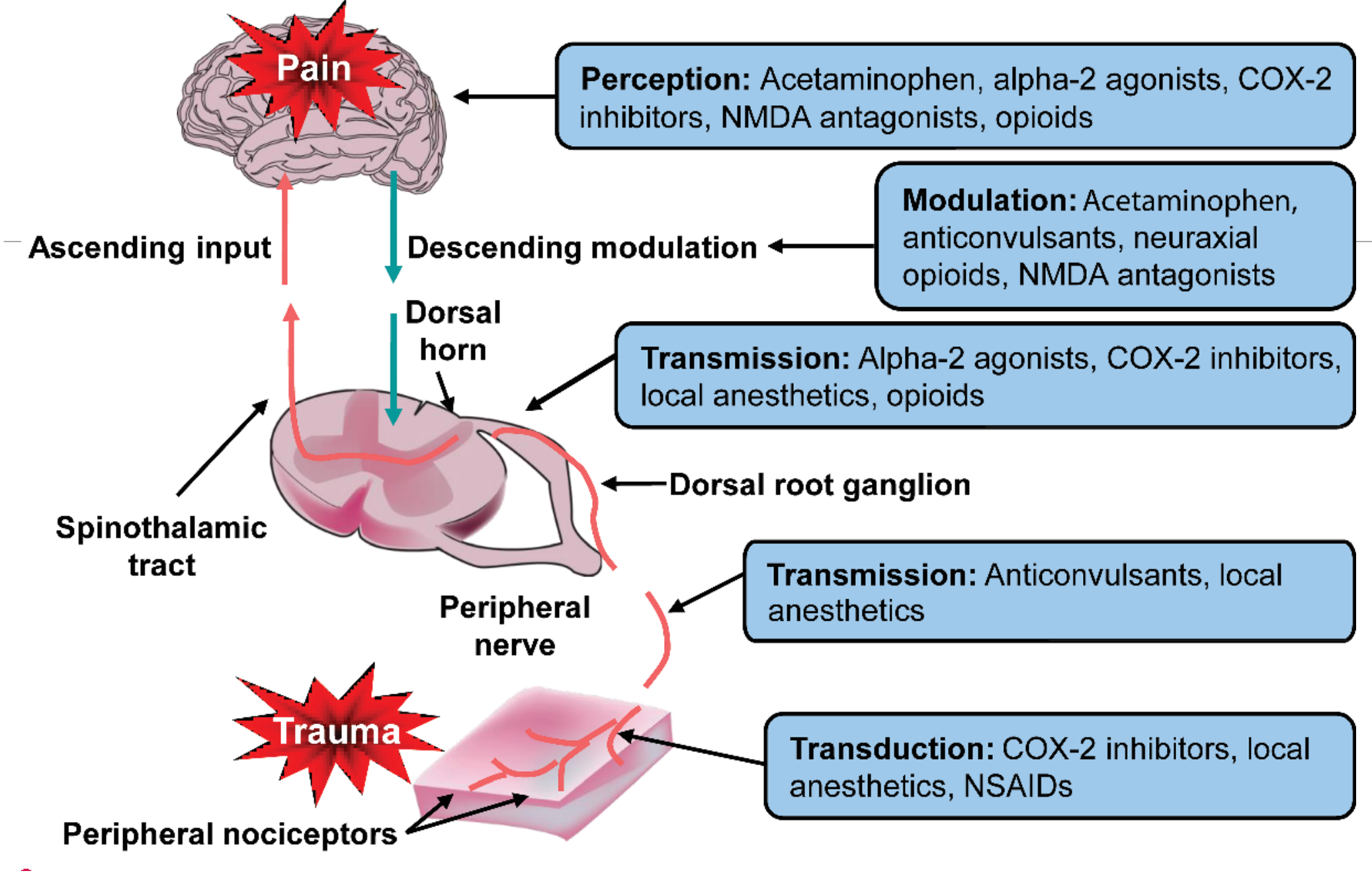
Každý pacient je jiný, a proto se zvolí taková kombinace analgetik a technik, která nejlépe vyhovuje konkrétnímu pacientovi a typu operace.

Minimalizace opioidů:

Omezuje se použití silných opioidů (léků proti bolesti), protože mohou způsobovat nauzeu, zvracení, zácpu a útlum dýchání, což zhoršuje zotavení.

Podpora rychlého zotavení:

Cílem je zmírnit bolest tak, aby pacient mohl co nejdříve mobilizovat, dýchat a začít jíst a pít, což je klíčové pro rychlý návrat k normálním aktivitám.


Pain
Perception: Acetaminophen, alpha-2 agonists, COX-2 inhibitors, NMDA antagonists, opioids
Ascending input
Descending modulation
Modulation: Acetaminophen, anticonvulsants, neuraxial opioids, NMDA antagonists
Dorsal horn
Transmission: Alpha-2 agonists, COX-2 inhibitors, local anesthetics, opioids
Dorsal root ganglion
Spinothalamic tract
Peripheral nerve
Transmission: Anticonvulsants, local anesthetics
Trauma
Transduction: COX-2 inhibitors, local anesthetics, NSAIDs
Peripheral nociceptors

Proč multimodální přístup k analgezii?

Optimalizace analgetického efektu k potřebám pacienta (a výkonu)

Současně minimalizování vedlejší účinků a komplikací

Synergistický či aditivní účinek kombinací

Snížení dávek jednotlivých analgetických komponent

Prevence centrální senzitizace

OPIOID SPARING PAIN CONTROL

Individuální plán péče (ušitý na míru)

Plán pro jednotlivé členy týmu v péči o pacienta (lékařské i nelékařské na všech místech poskytované péče)

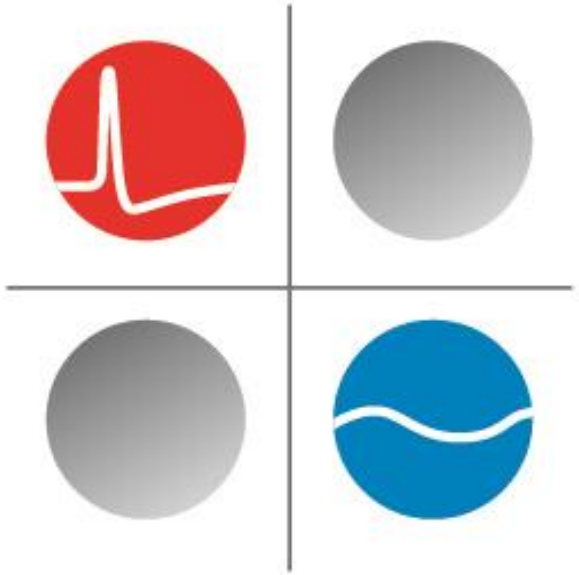
Plán pro standardní průběh poskytované péče

Plán pro nestandardní průběh poskytované péče (rescue postupy)

Plán pro komplikace

prospect

procedure specific postoperative pain management



Proč PROSPECT?

Jsou jasně rozdílné charakteristiky bolesti ve smyslu intenzity, původu, typu a trvání u různých operačních výkonů

Jsou jasně rozdílné charakteristiky následků špatně zvládnuté léčby bolesti u různých výkonů

Jsou jasně rozdílné charakteristiky cest, které kromě úlevy od bolesti, mohou naplnit hlavní cíle Fast track – s cílem co nejlepší konečný pacientský OUTCOME

THE PROSPECT WORKING GROUP

… A UNIQUE COLLABORATION BETWEEN SURGEONS AND ANAESTHESIOLOGISTS

Chairman +

Surgeons +

Anaesthesiologists +

ESRA Members +

Anaesthesia 2019, 74, 1298–1304 doi:10.1111/anae.14776

Original Article

Development of evidence-based recommendations for procedure-specific pain management: PROSPECT methodology

G. P. Joshi,[1] **M. Van de Velde,**[2,3] **H. Kehlet,**[3,4] and **on behalf of the PROSPECT Working Group Collaborators**[#]

1 Professor, Department of Anaesthesiology and Pain Management, University of Texas Southwestern Medical Center, Dallas, TX, USA
2 Chair, Department of Anesthesiology, UZLeuven, Leuven, Belgium
3 Professor, Anesthesiology, Department of Cardiovascular Sciences, KULeuven, Leuven, Belgium
4 Professor, Section for Surgical Pathophysiology, Rigshospitalet, Copenhagen University, Copenhagen, Denmark

Appendicectomy 2022

Caesarean Section 2020

Cleft palate surgery 2023

Complex Spine Surgery 2020

Craniotomy 2021

Haemorrhoidectomy 2022

Hallux Valgus Repair Surgery 2019

Hip Fracture Repair Surgery 2021

Inguinal Hernia Repair 2019

Laminectomy 2020

Laparoscopic Cholecystectomy 2022

Laparoscopic Colorectal Surgery 2022

Laparoscopic Hysterectomy 2018

Laparoscopic Sleeve Gastrectomy 2018

Oncological Breast Surgery 2019

Open Colorectal Surgery 2022

Open Liver Resection 2019

Prostatectomy 2020

Rotator Cuff Repair Surgery 2019

Sternotomy 2020

Thoracotomy 2015

Tonsillectomy 2019

Total Hip Arthroplasty 2019

Total Knee Arthroplasty 2020

Vaginal delivery with perineal tears or episiotomy 2023

Video-Assisted Thoracoscopic Surgery 2021

Best Practice & Research Clinical Anaesthesiology

Volume 28, Issue 2, June 2014, Pages 191-201

8

Procedure-specific pain management and outcome strategies

Girish P. Joshi MBBS, MD, FFARCSI (Professor of Anesthesiology and Pain Management) [a] ✉, Stephan A. Schug MD, FANZCA, FFPMANZCA (Professor of Anaesthesiology, Director of Pain Medicine) [b, 1] ✉, Henrik Kehlet MD, PhD (Professor and Chief of Surgical Pathophysiology) [c] ✉

Best Practice & Research Clinical Anaesthesiology

Volume 32, Issue 2, June 2018, Pages 101-111

3

Procedure-Specific Pain Management (PROSPECT) – An update

Brian Lee (Dr) [a], Stephan A. Schug (Professor) [a, b] ✉, Girish P. Joshi (Professor) [c], Henrik Kehlet (Professor) [d]

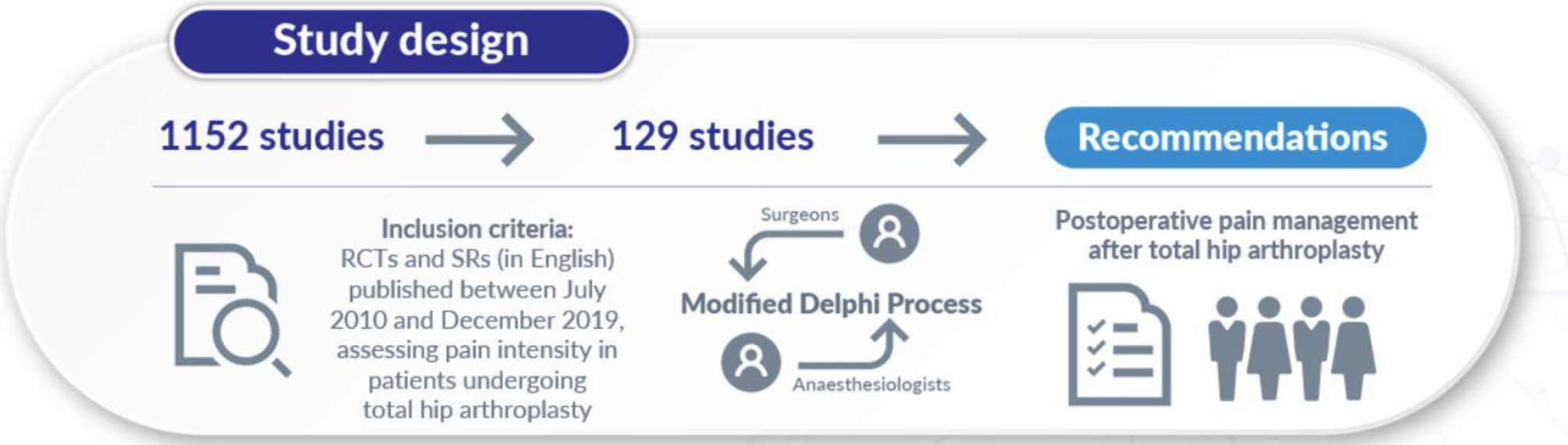
PROSPECT Working Group

prospect

procedure specific postoperative pain management

Recommendations for total hip arthroplasty

A systematic review with recommendations for postoperative pain management



Summary Recommendations

Download PDF EN / ES / FR / DE / PT / IT / CN / JP / PL / TR

Notes on PROSPECT recommendations +

Pain after total hip arthroplasty and aims of the PROSPECT review +

Recommended: Pre- and intra-operative interventions +

Recommended: Postoperative interventions +

Interventions that are NOT recommended +

Overall PROSPECT recommendations +

Infographic −


Patient advice
Pre-operative exercise and education are recommended.
Systemic (basic) analgesia
Paracetamol and NSAIDs/COX-2-specific inhibitors are recommended, administered pre-operatively or intra-operatively and continued postoperatively, unless contraindicated.
Anaesthetic technique
Spinal or general anaesthesia is recommended.
IV dexamethasone
A single intra-operative dose of dexamethasone 8–10 mg IV is recommended.
Local/regional analgesia
A single shot fascia iliaca block or local infiltration analgesia is recommended.
If the patient has received spinal anaesthesia for the surgery, intrathecal morphine 0.1 mg could be considered.
Opioids
Should be reserved for rescue analgesia.

Timing	Intervention	Reason for not recommending
Pre-operative or intra-operative	Carbohydrate loading	Limited procedure-specific evidence
	Outpatient status	Limited procedure-specific evidence
	Pre-incisional COX-2-selective inhibitor versus post-incisional	Limited procedure-specific evidence
	Gabapentinoids	Inconsistent evidence for single-dose. Procedure-specific evidence for multiple peri-operative doses, but extra side-effects
	Ketamine	Limited procedure-specific evidence
	Lateral femoral cutaneous block	Limited procedure-specific evidence
	Anterior quadratus lumborum block	Limited procedure-specific evidence
	Femoral nerve block	Procedure-specific evidence, but side-effects
	Lumbar plexus block	Procedure-specific evidence, but side-effects
	LIA adjuncts to local anaesthesia drugs	Inconsistent procedure-specific evidence
	LIA infusion or repeated injections	Inconsistent procedure-specific evidence
	Epidural analgesia	Procedure-specific evidence, but side-effects
Postoperative	Tranexamic acid	Lack of procedure-specific evidence
	Partial weight bearing	Lack of procedure-specific evidence
	Topical fibrin sealant	Lack of procedure-specific evidence
	TENS	Limited procedure-specific evidence
Surgical Technique	Anterior approach versus posterolateral approach	Inconsistent procedure-specific evidence
	Minimally invasive versus traditional incision	Inconsistent procedure-specific evidence, increased risks

prospect

procedure specific postoperative pain management

Recommendations for total knee arthroplasty

A systematic review with recommendations for postoperative pain management

Study design

151 SRs/MAs → 106 RCTs → Recommendations

Inclusion criteria:
RCTs identified from SRs and MAs published between January 2014 and December 2020, assessing pain intensity in patients undergoing total knee arthroplasty

Surgeons

Modified Delphi Process

Anaesthesiologists

Postoperative pain management after total knee arthroplasty

Systemic (basic) analgesia

Paracetamol and NSAIDs/COX-2-specific inhibitors are recommended, administered pre-operatively or intra-operatively and continued postoperatively, unless contraindicated.

Regional analgesia

Single shot adductor canal block, administered pre-operatively, and peri-articular local infiltration analgesia, administered intra-operatively, are recommended. A combination of these two techniques is preferred.

IV dexamethasone

Dexamethasone (≥10 mg, IV) is recommended, administered intra-operatively.

Intrathecal morphine

Intrathecal morphine (100 µg) may be considered only in hospitalised patients when surgery is performed under spinal anaesthesia and in the rare situation wherein both adductor canal block and local infiltration analgesia are not possible.

Opioids

Should be reserved for rescue analgesia.

Interventions that are NOT recommended

Analgesic interventions that are not recommended for pain management following primary TKA.

Intervention	Reason for not recommending
Gabapentinoids	Minimal analgesic and opioid-sparing effects and concerns of potential adverse effects, particularly when combined with postoperative opioids, which are typically high for total knee arthroplasty
Ketamine	Conflicting evidence
Dexmedetomidine	Inconsistent evidence
Epidural analgesia	Potential adverse effects precluding rapid recovery
Femoral nerve block	Negative impact on functional recovery
Sciatic nerve block	Negative impact on functional recovery

prospect

procedure specific postoperative pain management

Recommendations for laparoscopic cholecystectomy

A systematic review with recommendations for postoperative pain management

Study design

3147 studies → 188 studies → Recommendations

Inclusion criteria:
August 2017–December 2022, RCTs and SRs (in English), assessing pain intensity in adults undergoing laparoscopic cholecystectomy

Surgeons

Modified Delphi Process

Anaesthesiologists

Postoperative pain management after laparoscopic cholecystectomy

Systemic (basic) analgesia

The article recommends basic analgesia using a combination of paracetamol and NSAIDs or COX-2 inhibitors before or during the surgical procedure, with continued use in the postoperative phase, unless contraindications are present.

Regional analgesia

Port site wound infiltration or intraperitoneal local anaesthetic instillation are recommended. As second line regional techniques, the erector spinae plane block or transversus abdominis plane block may be reserved for patients with a heightened risk of postoperative pain.

Surgical techniques

Three-port laparoscopy, a low-pressure peritoneum, umbilical port extraction, active aspiration of the pneumoperitoneum and saline irrigation are recommended technical aspects of the operative procedure.

Opioids

Opioids should only be used as rescue analgesics if other interventions are insufficient due to their potential side effects and the impact on patient comfort and recovery.

Regional techniques	
Administration of intraperitoneal LA installation before surgery	Insufficient evidence
Intraperitoneal addition of dexmedetomidine or tramadol to the LA mixture	Insufficient evidence
Low concentration LA mixtures for intraperitoneal use	Insufficient evidence
Intraperitoneal fentanyl or ondansetron	Lack of evidence
Quadratus lumborum block	Conflicting evidence
Rectus sheath block	Insufficient evidence
Paravertebral block	Risk of side effects
Spinal or epidural anaesthesia	Risk of side effects
Surgical techniques	
Infra-umbilical incision	Lack of evidence
Single-port techniques and mini-port techniques	Lack of evidence
Routine drainage	Conflicting evidence
Low flow insufflation/NOTES	Insufficient evidence

Provždy a navždy

Koncept ERAS dává „do latě“ představy individualizovaných plánů péče jednotlivých specialistů

Analgetický plán ušitý na míru musí respektovat individualitu pacienta

Analgetický plán ušitý na míru musí individualizovat typ výkonu (vzpomeňte si na PROSPECT)

Ale neberte to jako dogma

DĚKUJI ZA POZORNOST

Česká anesteziologická cesta 2025

Od posledního průzkumu uplynulo 15 let.

Léky, přístroje i postupy se změnily — pojďme zjistit jak!

Zapojte se do nového celonárodního průzkumu.

Vyplňte krátký dotazník a pomozte ukázat, jak dnes opravdu podáváme anestezii.

Mockrát děkujeme

Výbor ČSARIM