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Recent Publications Impacting Ambulatory Anesthesia Practice

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Disclosures: Consultant Merck Sharp Dohme Inc.

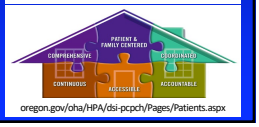
1

Reengineering in Surgical Paradigm: Complex Surgical Procedures on High-Risk Patients

- Improves postoperative outcomes and reduces healthcare costs
- Ambulatory surgery facilitates patient-centered care
- Ambulatory surgery meets triple aim of healthcare
  - Patient satisfaction, value, population health

Delaunay L: J Visc Surg 2022;159:2-4

Where Is the Value in Ambulatory Versus Inpatient Surgery?
Friedlander DF, et al: Ann Surg 2021; 273: 909–16



oregon.gov/oha/HPA/dsi-pcpch/Pages/Patients.aspx

2

ERAS For Ambulatory Surgery: Multidisciplinary, Reduce variability

Preoperative	Intraoperative	Postoperative
Procedure/Patient Selection	Fast-track GA	Post-discharge Care/monitoring
Identify/Optimize comorbidities	Pain/PONV prophylaxis	Patient-related outcomes
Minimal fasting	Hemodynamic Mgmt	
Pre-habilitation	Ventilation	
Patient education	Normothermia	
Minimally Invasive	SSI prophylaxis	
	VTE prophylaxis	

Joshi GP: Curr Opin Anesthesiol 2021; 34: 667-71

3

Preoperative Considerations

4

Enhanced recovery and same-day discharge hospital stay: speed *versus* safety?

Girish P. Joshi[1] and Henrik Kehlet[2,*]
BJS, 2023, 1–2 https://doi.org/10.1093/bjs/znad222

Perioperative Framework For Same Day Discharge

- Experience with pathway implementation
- Surgeons' experience/expertise
  - Outcomes, minimally invasive approach
  - Liberal discharge criteria
    - e.g., discharge criteria for colorectal surgery: oral intake, no return of GI function, ambulation
- Anesthesiologists' experience/expertise
  - Regional techniques, sicker patients in ASC
- Patient factors: compliance/support
- Post-discharge follow-up: home care

Discharge within 24 hours following colonic surgery—a distant dream or near reality? A scoping review
Tan JKH, et al: Surgery 2022; 172: 869-77

Feasibility analysis for the development of a video-assisted thoracoscopic (VATS) lobectomy 23-hour recovery pathway
Dumitra TC, et al: Can J Surg 2020;63:E349-58

Barriers and facilitators in the implementation of a telemedicine-based outpatient brain tumor surgery program
Mora C, et al: Neurosurg Focus 2022; 52 (6): E8

Anesthesia for same day neurosurgery with updates on awake craniotomy and awake spine surgery
Ajayan N, et al: Curr Opin Anesthesiol 2023;36:500-9

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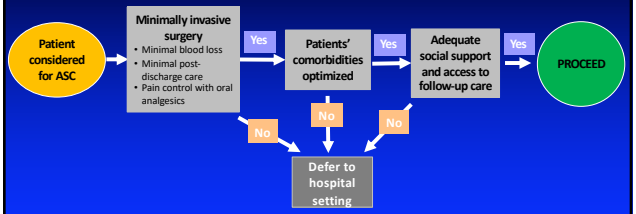
Framework For Procedure and Patient Selection



ASC must have adequate personnel and be appropriately equipped

6

Preoperative Evaluation

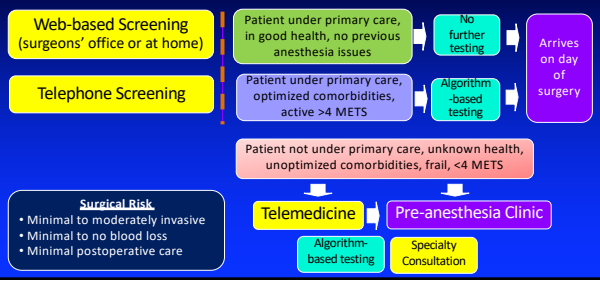
7

Preoperative Assessment: Goals

- Risk assessment and optimization of modifiable conditions
- Perioperative planning including surgical venue
- Care coordination: interdisciplinary communication with perioperative care team and primary care
- Patient education and shared decision-making
  - Anesthesia and pain management (regional anesthesia)
  - Chronic medication management (i.e., continue vs. discontinue)
  - Population health initiatives (e.g., smoking cessation)
  - Post-discharge expectations (normal course vs. abnormal course)

8

Preoperative Evaluation: Triage



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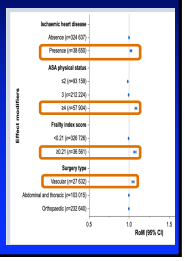
Association of preoperative anaesthesia consultation prior to elective noncardiac surgery with patient and health system outcomes: a population-based study

Engel JS, et al: Br J Anaesth 2023; 131: 937-46

- Administrative data analysis of patients (n= 364,149) >40 yr, undergoing intermediate-to-high-risk elective non-cardiac surgery
- 75.3% received a pre-anesthesia consultation
- No correlation between consultation and days alive and at home, mortality at 30 days
- Outcomes improved in high-risk subgroup
  - High ASA-PS, cardiac risk, frailty, procedural risk



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Association of Preoperative Medical Consultation With Reduction in Adverse Postoperative Outcomes and Use of Processes of Care Among Residents of Ontario, Canada

Beckerleg W, et al: JAMA Intern Med 2023;183(5):470-478.

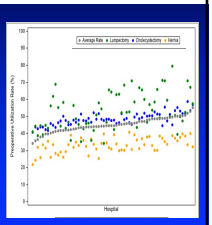
- Retrospective cohort study (n=530,473) in patients >40 years who underwent intermediate-to-high risk non-cardiac surgery
- Propensity score matching (n=179,809) between patients who did and did not undergo preoperative medical consultation
- Preoperative medical consultation was associated with an increase in adverse postoperative outcomes
- Preoperative consultation and subsequent testing should be guided by individual-level consideration of risks and benefits

11

Comprehensive History and Physicals are Common Before Low-Risk Surgery and Associated With Preoperative Test Overuse

Metz AK, et al: J Surg Res 2023; 283: 93-101

- Retrospective study of patients undergoing low-risk ambulatory surgery (n=50,775)
- 50.5% had preoperative H&Ps within 30 days
- H&P visits were associated with increased preoperative testing (57.2% vs. 41.4%)
  - High rate of low-value tests
- Avoid indiscriminate referrals and testing



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Preoperative ACEIs and ARBs

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Preoperative Renin-Angiotensin System Antagonists Intake and Blood Pressure Responses During Ambulatory Surgical Procedures: A Prospective Cohort Study

Gurunathan U, et al: Anesth Analg 2024; 138: 763-74

- Prospective cohort study of patients (n=537) undergoing ambulatory surgery
- Patients stratified into four groups
  - No antihypertensives
  - ACEI/ARB taken <10 hours before surgery
  - ACEI/ARB taken ≥10 hours before surgery
  - Other antihypertensives
- Early hypotension observed in 25%, and any hypotension in 41.5%
  - Decrease in systolic BP >30% from baseline for ≥5 min or mean BP of <55 mmHg
- BP variability associated with age, baseline BP, antihypertensive exposure
  - Higher odds of early and/or any hypotension in hypertensive patients and/or those with preoperative BP ≥140/90 mmHg
- No association between ACEI/ARB use and hypotension

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Angiotensin-Converting Enzyme Inhibitors and Angiotensin Receptor Blockers: To Continue or Stop Preoperatively—the Debate Continues

Niraja Rajan, MD, FASA, SAMBA-F,* and Girish P Joshi, MBBS, MD, FFARCSI, FASA, SAMBA-F†

Anesth Analg 2024; 138: 760-2

- Recommendations to withhold ACEIs/ARBs based on evidence from inpatient populations, may not be applicable to ambulatory surgery
- 2014 ACC/AHA: continue, but if they are withheld, restart as soon as possible
- 2017 Canadian CV Society: withhold for 24 h
- 2022 ESC/ ESA: Continue if taken for hypertension but withhold if taken for HF and if low baseline BP

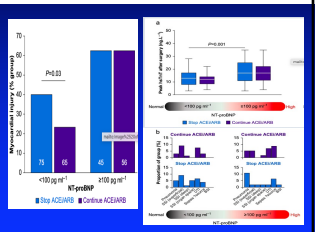
Authors	Study design	Conclusions
Cambre et al[9]	Retrospective	Discontinuation of ACEI/ARB therapy at least 10 h before anesthesia was associated with a reduced risk of immediate postinduction hypotension
Rivenzi et al[7]	Retrospective	ACEI/ARB therapy continued with diuretic therapy was associated with increased episodes of hypotension
Brillembourg et al[8]	Randomized	Omitting preoperative ACEI dose was associated with less frequent intraoperative hypotension and lower use of vasopressor, but more frequent postoperative hypertension episodes
Reinhamn et al[1]	Retrospective observational cohort	Patients who withheld ACEIs/ARBs within 24 h before surgery were less likely to suffer the primary composite outcome of all-cause death, stroke, or myocardial injury at 30 d, and less likely to have intraoperative hypotension with no influence on postoperative hypotension
Lee et al[2]	Retrospective cohort	Preoperative withholding of ARB therapy was associated with increased 30-day mortality, especially in younger patients, most likely due to delay in resuming ARB therapy after surgery
ENVISAGE Collaborative[3]	Prospective cohort	There was no association between withholding ACEI/ARB therapy and the incidence of postoperative acute kidney injury and requirement for renal replacement therapy as well as 30-day mortality. The lack of association remained even after propensity score matching for use of medications with known nephrotoxicity (eg, diuretics and aminoglycoside antibiotics)
Hohmann et al[4]	Meta-analysis	Continuation of ACEIs/ARBs was associated with intraoperative hypotension, but with no demonstrable association between ACEI/ARB administration and mortality, major adverse cardiac events, stroke, or acute kidney injury
Ling et al[5]	Meta-analysis	There is insufficient evidence to recommend discontinuing ACEIs/ARBs on the day of surgery

15

Preoperative N-terminal pro-B-type natriuretic peptide and myocardial injury after stopping or continuing renin–angiotensin system inhibitors in noncardiac surgery: a prespecified analysis of a phase 2 randomised controlled multicentre trial

del Arroyo AG, et al: Br J Anaesth 2024; 132: 857-66

- Stopping ACEI/ARB in lower-risk patients (preop NT-proBNP <100 pg/ml) increased the likelihood of myocardial injury before non-cardiac surgery
- In high-risk patients, myocardial injury rates similar regardless of stopping or continuing



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GLP-1 Receptor Agonists

17

Develop multidisciplinary protocols/procedures appropriate for individual practices based on shared decision-making*

Pre-procedure Evaluation
[In advance to allow adjustments]
Identify High Risk Patient*

Yes
- Withhold GLP-1 RA
- Liquid diet for 24 h

No
- Continue GLP-1 RA

Day of Procedure
- GLP-1 RA not held in high-risk patient
- Severe GI symptoms*

Gastric Ultrasound-Stomach Empty

Yes → Proceed

No → Not Possible/ Inconclusive → RSI or Delay

***High Risk For Aspiration**
- Escalation (vs. maintenance) phase
- Weekly (vs. daily) dosing
- Higher doses
- Presence of GI symptoms
  - Nausea, vomiting, abdominal pain, dyspepsia, constipation
- Concomitant medical conditions that delay gastric emptying
  - Bowel dysmotility, gastroparesis

***Shared Decision-Making**
- Discuss the concerns of regurgitation and aspiration with the patients and the surgeon/proceduralist

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Preoperative Pregnancy Testing

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Ethical Principles Do Not Support Mandatory Preanesthesia Pregnancy Screening Tests: A Narrative Review

Jackson S, et al: Anesth Analg 2024; 138: 980-8

- Has the potential for physical, psychological, and social harm
  - –Not ethically acceptable because it fails to recognize patient autonomy
- Establish a comprehensive policy
  - –Provide printed and digital educational material
  - –Acknowledge that medical evidence indicates elective anesthesia during early pregnancy does not pose significant harm to the developing fetus
  - –Explain that scientific evidence can never guarantee no harmful effects, suggest a precautionary approach and advise against proceeding with an elective procedure if the presence of early pregnancy is suspected or known
  - –Not ethically or medically reasonable to prevent patients from undergoing anesthesia if they still desire to do so after being fully informed

20

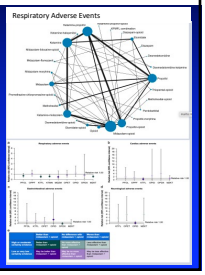
Procedural Sedation

21

Pharmacological agents for procedural sedation and analgesia in the emergency department and intensive care unit: a systematic review and network meta-analysis of randomised trials

Sharif S, et al: Br J Anaesth 2024; 132: 491-506

- Compared with midazolam-opioids
  - – Ketamine had fewer respiratory adverse events
  - – Propofol had shortest recovery time
  - – Ketamine-propofol had highest patient satisfaction
  - – Propofol-opioids had higher rates of respiratory and cardiac adverse events, but fewer GI adverse events
- Individualized approach based upon patient and procedure characteristics



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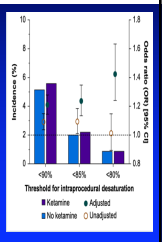
Association of ketamine use during procedural sedation with oxygen desaturation and healthcare utilisation: a multicentre retrospective hospital registry study

Salloum E, et al: Br J Anaesth 2024; 132: 779-88

- Multicenter cohort study of patients (n=234,170) undergoing procedural sedation by anesthesia providers
- Ketamine associated with dose-dependent increase in risk of O_2 desaturation (SaO_2<90% for 2 min)
  - –Patient risk factors: age >65 years, smoking, prior ICU admission
  - –Procedure risk factors: upper endoscopy >2 h
  - –Concomitant opioid administration mitigated the risk
- Ketamine increased odds of discharge to nursing home
- Sympathomimetic effects of ketamine – increased O_2 consumption, stimulated breathing patterns, muscle tension



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Preoperative Midazolam

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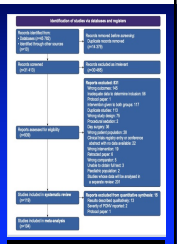
The effect of perioperative benzodiazepine administration on postoperative nausea and vomiting: a systematic review and meta-analysis of randomised controlled trials

Au E, et al: Br J Anaesth 2024; 132: 469-82

- Moderate quality evidence suggests that benzodiazepine decreases PONV (NNT 16-55)
- Limitations of included studies
  - Small, single center RCTs
  - High or unclear risk of bias
  - Lack of time frame of PONV assessment
  - Interventions in control arm could have increased PONV
  - No assessment of PONV prophylaxis
- "Despite showing that benzodiazepines are effective at preventing PONV, we are unable to conclude whether this is a class effect or limited to specific benzodiazepines, nor are we able to draw conclusions about appropriate dosing."



Exercise in futility!!

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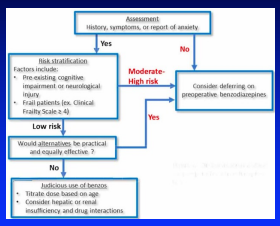
Preoperative Midazolam

- Despite recommendations for judicious use, midazolam still used routinely and indiscreetly
- Recent database analysis found 75% of patient undergoing orthopedic surgery received midazolam
  - Athanassoglou V, et al. RAPM 2022;47: 228–33
  - Cozowicz C, et al: Anesth Analg 2022; 134: 486-95
  - Mahanna-Gabrielle E, et al: Anesth Analg 2023;137:280-8



Rhee J, et al: Anesth Analg 2023; 137: 277-9

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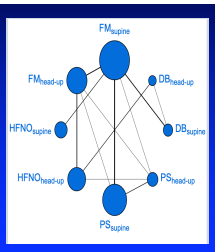
Pre-oxygenation

27

Effectiveness of preoxygenation strategies: a systematic review and network meta-analysis

De Carvalho CC, et al: Br J Anaesth 2024 (Epub)

- Systematic review and network meta-analysis of 52 RCTs (3914 patients) evaluating pre-O_2 techniques
- HFNO with head-up position was associated with a prolonged safe apnea time, compared with other techniques
- HFNO increased PaO_2 the most at the end of pre-O_2



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Apneic Oxygenation in Obese

- Apneic oxygenation possible in morbidly obese
  - Desaturation did not occur for 18 min, with O_2 delivery using HFNC or lower flow facemask
    - Schutzer-Weissmann J, et al: Br J Anaesth 2023; 130: 103-110
- Meta-analysis (n=6 studies) found no differences between preoxygenation with face mask and HFNC in preventing desaturation (SaO_2 <92%) or lowest saturation
  - Bright MR, et al: Anesth Analg 2023;136 483-93

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Preparation remains important to prevent and manage desaturation during induction of high-risk patients (e.g., Obese, OSA, pulmonary disease)

30

Impact of female sex on anaesthetic awareness, depth, and emergence: a systematic review and meta-analysis

Braithwaite HE, et al: Br J Anaesth 2023; 131: 510-22

- Meta-analysis of RCTs/prospective cohort trials (n=64) including 98,243 participants, 53,143 were females
- Females had a higher incidence of awareness with postoperative recall (33 studies, OR 1.38) and connected consciousness – intraop response to command (3 studies, OR 2.09)
- Time to emergence was faster in females, including time to eye-opening (10 studies, mean difference -2.28 min)
- Data on depth of anesthesia were heterogenous, limiting synthesis to qualitative analysis, no differences between females/males

31

The effect of sugammadex on patient morbidity and quality of recovery after general anaesthesia: a systematic review and meta-analysis

Olesnicky BL, et al: Br J Anaesth 2024; 132: 107-115

- Systematic review of RCTs (n=43) comparing sugammadex with anticholinesterase-based reversal or placebo
- Sugammadex reduced odds ratio for postoperative pulmonary complications of 0.67 (95% CI, 0.47-0.95) but no effect on hospital LOS or patient satisfaction
- While sugammadex objectively improves reversal of neuromuscular block, it is unclear whether important postoperative clinical outcomes are improved

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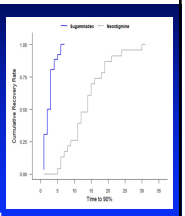
Sugammadex Versus Neostigmine for Reversal of Neuromuscular Blockade in Patients With Severe Renal Impairment: A Randomized, Double-Blinded Study

Oh MW, et al: Anesth Analg 2024; 138: 1043-51

- RCTs of patients with severe renal impairment (n=49)
  - Rocuronium 0.6 mg/kg and sugammadex 2 mg/kg
  - Cisatracurium 0.2 mg/kg and neostigmine 50 mcg/kg/ glycopyrrolate 10 mcg/kg
- Mean time to return of TOR >90% was faster with sugammadex (3.5 min) vs. neostigmine (14.8 min)
- Mean time to extubation for sugammadex 5.4 min vs. neostigmine 11.6 min
- Limitations:
  - No information of depth of block at the time of reversal
  - Recovery profiles of cisatracurium and rocusonium vary



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Intraoperative Opioids

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Association of Intraoperative Opioid Administration With Postoperative Pain and Opioid Use

Santa Cruz Mercado LA, et al: JAMA Surg 2023; 158: 854-64

- Retrospective cohort study, patients (n= 61,249), non-cardiac surgery with GA (2016-2020)
- 47.6% Outpatients (HOPD) and 42.4% inpatients
- Intraoperative fentanyl improved all outcomes measures
- Intraoperative hydromorphone increased in-hospital opioid use, LOS, and opioid prescriptions

	Fentanyl	Hydromorphone
PACU maximum pain	Reduced	Reduced
PACU opioid use	Reduced	Reduced
24-h opioid use	Reduced	Reduced
In-hospital opioid use	Reduced	Increased
Hospital LOS	Reduced	Increased
30, 90, 180 days opioid prescriptions	Reduced	Increased

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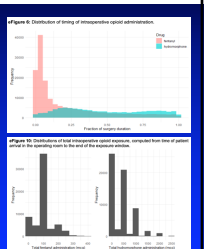
Association of Intraoperative Opioid Administration With Postoperative Pain and Opioid Use

Santa Cruz Mercado LA, et al: JAMA Surg 2023; 158: 854-64

- Minimal non-opioid analgesic used (APAP=3.7%, NSAIDs=25%, no data on RA use)
- Differences not clinically significant
  - Fentanyl 100 µg reduce max pain score by 0.49-point, reduce PACU opioid use by 0.36 MME (-12.7%), 24-h opioid use by 4.9 MME (–45.6%), in-hospital opioid use by 16.6 MME (-38.6%)
  - 500 µg hydromorphone would reduce max pain score by 0.08-point, reduce PACU opioid use by 0.41 MME (–14.4%), 24-h opioid use by 1.5 MME (–17.7%), increase in-hospital opioid use by 3.5 MME (+8.2%)



Exercise in futility!!

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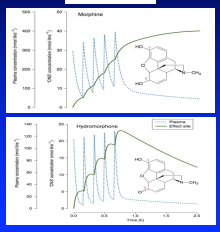
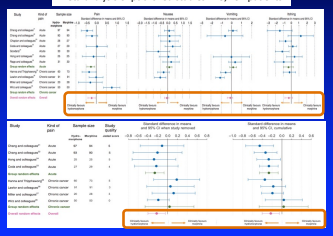
Morphine Versus Hydromorphone

Pharmacokinetics



Meta-analysis of published studies n=8, 494 patients



Felden L et al. Br. J. Anaesth 2011; 107: 319-28

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Morphine Versus Hydromorphone

- Crossover study in healthy volunteers compared analgesic and adverse effects of morphine vs. hydromorphone
- Hydromorphone had a rapid onset of analgesic, miotic, and ventilatory effects
  - Onset after bolus dose 5 min and peak effects 10-20 min
- Morphine had disparities in timing and magnitude of clinical effects
  - Delayed onset, delayed respiratory depression relative to analgesia (and miosis), and greater magnitude of respiratory depression

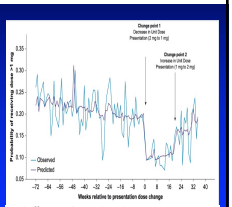
Meissner K, et al: Anesthesiology 2023; 139: 16-34

38

Intraoperative hydromorphone decreases postoperative pain: an instrumental variable analysis

Ershoff B: Br J Anaesth 2023; 131: 104-12

- Cohort study of patients receiving hydromorphone (n=6750)
- 0.2 mg increase in hydromorphone use decreased pain scores on PACU arrival and decreased maximum and time-weighted mean pain scores over 2 days postop without increase in opioid use
- No data on non-opioid analgesic or RA use
- Conclusions based on statistical analysis



Ershoff BD, et al: Anesthesiology 2020; 132: 981-91

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Methadone for Ambulatory Surgery

- Randomized, double-blind, dose-finding pilot study in patients (n=124) undergoing next-day discharge outpatient surgery
- Methadone (0.1, 0.2, 0.25, 0.3mg/kg IBW) single dose vs. control (fentanyl and/or hydromorphone, as needed, n=40)
- Methadone 0.25mg/kg IBW (14-18 mg, IV), considered optimal
- Control group: fentanyl 260±80 µg and/or hydromorphone 1.0±0.7 mg, total 30±9 mg IV MME
- No data on non-opioid analgesic or RA use
- Methadone use in ambulatory surgery remains questionable

Kharasch ED, et al: Anesthesiology 2023; 139: 405-19

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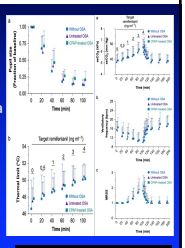
Opioid sensitivity in treated and untreated obstructive sleep apnoea: a prospective cohort study

Montana MC, et al: Br J Anaesth 2024; 132: 145-53

- Prospective cohort study–subjects received remifentanil via TCI (target=0.5, 1, 2, 3, 4 ng/ml, rates changed q 12min)
- Outcomes
  - Primary: miosis, the most sensitive opioid effect
  - Secondary: ventilatory rate, end-expired CO2, thermal analgesia
- No differences between those without OSA (n=20), with untreated OSA (n=33), and OSA treated with PAP (n=21)
- Significant limitations: no surgical stress response (which influences OSA), no effects residual analgesics/anesthetics, small sample size, OSA-related comorbidities not reported
- Overall: findings do not apply to clinical practice



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Opioid-free anaesthesia reduces postoperative nausea and vomiting after thoracoscopic lung resection: a randomised controlled trial

Feng CD, et al: Br J Anaesth 2024; 132: 267-76

- Patients (n=120) randomized
  - Opioid-free Group: Esketamine (0.3 mg/kg, then 0.1 mg/kg), dexmedetomidine (0.6 mcg/kg over 10 min, 0.2-1 mcg/kg/h)
  - Opioid-based Group: sufentanil (0.3 mcg/kg at induction, 0.1 mcg/kg boluses)
- Surgical pleth index (SPI) of 20-50 was applied for intraoperative analgesia
- All patients received PONV prophylaxis with dexamethasone and ondansetron
- Pain Mgmt: flurbiprofen axetil, ropivacaine wound infiltration, sufentanil PCA
- OFA significantly reduced the incidence of PONV (15% vs 31.7%; odds ratio 0.38, 95% CI, 0.16-0.91; NNT=6)
- OFA led to longer length of PACU stay (median difference 15.5 min)
- Limitations: high sufentanil dose used (mean=50 mcg for 2 h procedure), sample size inadequate based on 40% PONV rate

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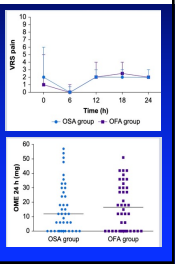
Opioid-free *versus* opioid-sparing anaesthesia in ambulatory total hip arthroplasty: a randomised controlled trial

Clement Chassery[1,*], Vincent Atthar[1], Philippe Marty[1], Corine Vuillaume[1], Julie Casalprim[1], Bertrand Basset[1], Anne De Lussy[1], Cécile Naudin[2], Girish P. Joshi[3] and Olivier Rontes[1]

Br J Anaesth 2024; 132: 352-8

- Prospective, triple-blind, RCT, patients undergoing THA with GA (n=80)
  - Sufentanil 10 mcg, IV on induction of GA, then PRN 5 mcg, IV
  - Dexmedetomidine 1 mcg/kg infusion over 30 min, then PRN, 0.4 mcg/kg, IV
- All patients received standardized GA and pain therapy
  - Multimodal analgesia (acetaminophen, NSAIDs, RA/LIA)
- No differences in cumulative opioid use at 24 h
- No differences in pain scores with walking
- Dizziness higher in dexmedetomidine group
- No benefit from complete avoidance of intraop opioids



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Intraoperative Dexamethasone

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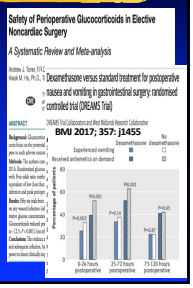
Dexamethasone and Pain

- Benefits
  - Reduces PONV, pain, opioid use, rebound pain, fatigue
  - Prolongs nerve blocks, improves functionality
- No safety concerns
  - No delay in wound healing, increased infection
    - Corcoran TB, et al: N Eng J Med 2021; 384; 18
    - Asehnoune K, et al: BMJ 2021;373:n1162
  - Hyperglycemia, but within acceptable limits
    - Abdelmalak BB, et al: Br J Anaesth 2014; 112: 79-88
    - Murphy GS, et al: Anesth Analg 2014; 118: 1204-12
- Dose: 8-10 mg, IV after induction of GA
  - Avoid in uncontrolled DM (HbA1c >10%)



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High-dose steroids in high pain responders undergoing total knee arthroplasty: a randomised double-blind trial

Nielsen NI, et al: Br J Anaesth 2022; 128: 150-8

- Reduced occurrence of moderate-to-severe pain (VAS>30/100) during 5 m walk after 24 h (primary outcome): 49% vs 79%
- Improved pain on leg raise and QoR-15 scores

High-dose dexamethasone in low pain responders undergoing total knee arthroplasty: a randomised double-blind trial

Nielsen NI, et al: Br J Anaesth 2023; 130: 322-30

- Did not reduce pain scores, rescue opioid and antiemetic use, and opioid-related symptom distress scores or improve QoR-15 scores

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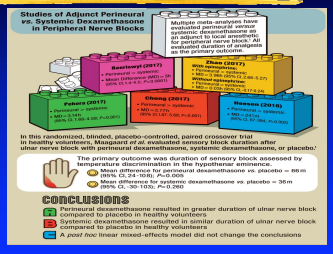
Perineural Versus Intravenous Dexamethasone

- Sensory block duration with placebo (640±121 min)
  - Greater with perineural dexamethasone 4 mg (706±94 min, mean difference – 66 min)
  - Similar for IV dexamethasone 4 mg (677±112 min)

Maagaard M, et al: Anesthesiology 2023; 138: 625-33



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Sensory block duration after spinal anaesthesia supplemented with intravenous dexamethasone: a randomised controlled double-blinded trial

Bikfalvi A, et al: Br J Anaesth 2023; 130: 780-5

- Double-blind RCT compared dexamethasone 0.15 mg/kg, IV and placebo in patients receiving SA with isobaric bupivacaine 15 mg + morphine 100 mcg
- Dexamethasone did not prolong duration of sensory block vs. control (135 [105-225] min vs. 158 [135-240] min)
  - Time of intrathecal injection to regression of sensory block by 2 dermatomes compared with highest dermatome blocked
- Dexamethasone group consumed less morphine at 24 h, and had less PONV at 2h and 24 h

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Dexamethasone and Persistent Wound Pain

- Secondary analysis of a pragmatic RCT comparing intraop dexamethasone 8 mg (n=4258), vs. placebo (n=4220)
- Dexamethasone effective and safe antiemetic
- Dexamethasone reduced the maximum pain at rest (median 5 vs. 6) and on movement (7 vs. 8) in the first 3 days after surgery
- Dexamethasone was associated with greater risk of pain at surgical site at 6 months after surgery (11.5% vs. 9.6%)
  - Findings are unexpected, might be chance, and require further research
- Postoperative pain severity was not predictive of chronic pain

Corocran TB, et al: Br J Anaesth 2023; 131: 93-103

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General anesthetic techniques for enhanced recovery after surgery: Current controversies

Joshi GP: Best Prac Res Clin Anaesthesiol 2021; 35: 531-41

- Avoid routine use of midazolam
- No differences between inhalation anesthesia or TIVA
- Avoid deep anesthesia (MAC 0.8–1 and/or EEG monitoring)
- Minimize NMBD, reverse appropriately
- Opioid-sparing NOT opioid-free approach
- Multimodal analgesia and antiemetic prophylaxis

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Vasopressors

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Phenylephrine vs. Ephedrine: Postoperative Delirium

- Multicenter, retrospective, cohort study, chart review of patients undergoing non-cardiac, non-neurosurgical procedures (n=103,094)
- Phenylephrine associated with higher delirium <7 days after surgery
- Relationship between the phenylephrine dose and the patient's risk of postoperative delirium
  - Phenylephrine, pure α1-adrenergic receptor agonist can impair cerebral circulation, can contribute to postoperative delirium
  - Ephedrine, an indirectly acting α- and β-adrenergic agonist, maintains cerebral blood flow and tissue oxygenation

Ma H, et al: Anesthesiology 2024; 140: 657-68

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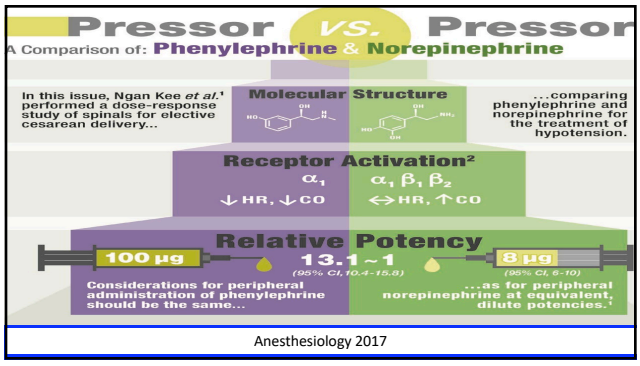

Anesthesiology 2017

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Post-discharge Considerations

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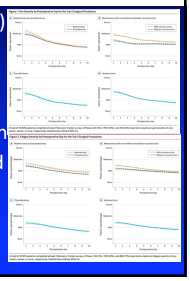
Electronic Patient-Reported Symptoms After Ambulatory Cancer Surgery

Cracchiolo JR, et al: JAMA Surg 2024

- Retrospective cohort study in patients (n=10,814) undergoing major ambulatory cancer surgery
- Postoperative symptoms assessed for 10 days, (ePRO platform) to describe recovery patterns
- Defining postoperative symptom burden data can enhance patient education, set expectations, and support research to allow iterative improvement of clinical care based on the patient-reported experience after discharge



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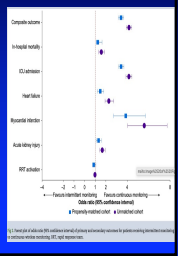
Impact of continuous and wireless monitoring of vital signs on clinical outcomes: a propensity-matched observational study of surgical ward patients

Rowland BA, et al: Br J Anaesth 2024; 132: 519-27

- Observational study of patients admitted to general surgical wards
- After propensity matching, compared with continuous wireless monitoring (n=7955), intermittent monitoring (n=12,345) was associated with increased risk of:
  - Composite of mortality or ICU admission (OR 3.42, 95% CI 3.19-3.67; P<0.001)
  - HF (OR 1.48, 95% CI 1.21-1.81; P<0.001)
  - MI (OR 3.87, 95% CI 2.71-5.71; P<0.001)
  - Acute kidney injury (OR 1.32, 95% CI 1.09-1.57; P<0.001)
  - Odds of rapid response team intervention were similar



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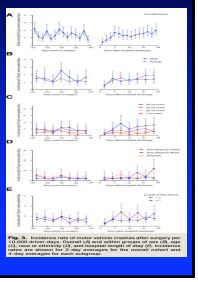
Motor Vehicle Crash Risk After General Anesthesia

- Surgery and anesthesia associated with cognitive and functional impairment and may impact safe driving
- Nested case-crossover study (n=70,722) found similar crash incidence before and after surgery
- Association between surgery and car crashes
  - Age (younger adults > older adults)
  - Sex (males > females)
  - Race/ethnicity (minority > non-Hispanic White)
  - Hospital length of stay
- Perioperative setting may present an opportunity to promote safe driving practices in general

Gaulton TG, et al: Anesthesiology 2023; 138: 602-10



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Summary

- Growth in ambulatory surgery provides opportunity for anesthesiologists to play a pivotal role in perioperative care, including post-discharge care
- Develop evidence-based procedure- and patient-specific pathways with multidisciplinary input
- Elements that influence outcomes after ambulatory surgery
  - Preoperative: patient selection, preoperative evaluation and optimization
  - Fast-track anesthetic technique, pain and PONV prophylaxis
  - Post-discharge care: patient education and monitoring for early identification of complications using modern technology

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