Perioperative Delirium Prevention and Treatment Pathway

General principles

1 Use non-pharmacologic prevention measures

2 Avoid polypharmacy when possible

3 Communicate with preop/PACU nurses and surgical team

Delirium risk stratification and prevention

If patient is ≥ 65 years ***or*** has an AWOL-S predicted risk of delirium ≥ 5%

Intraop

- Implement Intraop bundle (see next page)

PostOp

- Order "Delirium Prevention Interventions" and antiemetics for patients with high delirium risk in PACU orderset
- Sign out delirium risk to PACU nurse

Delirium treatment

1 Evaluate for underlying contributors to delirium

- Physical exam: check surgical wound; check tubes/ lines/drains
- Brief neuro exam
- Vital signs, oxygen saturation, pain assessment
- Targeted Workup: Consider ABG, UA, CBC, BMP, TSH, LFTs, UTox, cultures, EKG, Chest X-ray

2 Evaluate for reversible precipitating or contributing factors

- **D**rugs/medications /polypharmacy
- **E**lectrolytes (Na, Ca, acid-base disorders), **E**nvironment change
- **L**ack of drugs (withdrawal), **L**ack of sleep
- **I**nfection, **I**mmobility (catheters, feeding tubes), **I**atrogenic
- **R**estraints, **R**educed sensory input (vision, hearing), **R**espiratory (hypoxemia/hypercarbia)
- **I**ntracranial (stroke, bleed, seizure, meningitis)
- **U**rinary retention, constipation, **U**ncontrolled pain
- **M**etabolic (hypoxemia, hypercarbia, glucose, uremia, hepatic encephalopathy, thyroid dysfunction)

3 Review medications

- Discontinue contributing medications (ex: Beers Criteria) when possible

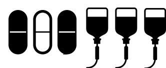
UCSF Medical Center

All phases

General recommendations

Enable the patient to wear glasses and hearing aids for as long as possible

Provide frequent reorientation when awake



Keep it simple: avoid polypharmacy when possible

PONV management

Preferred order of anti-emetics	Avoid (when possible)
• Preventative measures: propofol infusion, aprepitant (if very high risk) • Ondansetron (4 mg IV q6h) • Haloperidol (0.5 – 1 mg q6h) • Metoclopramide (5 mg IV once)	• Dexamethasone (especially doses > 4 mg) • Diphenhydramine *(Benadryl)* • Hydroxyzine *(Vistaril)* • Lorazepam *(Ativan)* • Prochlorperazine *(Compazine)* • Scopolamine

Medication management

Medication Class	Examples	Precautions	Rationale
NSAIDs	Ketorolac Diclofenac Ibuprofen	• Avoid when GFR < 30 (Stage IV – V CKD) or in AKI • Use caution with repeated doses	Increased risk of GI bleeding, increased risk of AKI (for ketorolac specifically)
Sedative Hypnotics	Benzodiazepines	Avoid (except for specific indications such as seizure)	Increased risk of delirium, cognitive impairment, falls, fractures
	Gabapentin	• Reduce dose or avoid when GFR < 60 • Avoid in patients with ESRD	Increased risk of over-sedation
	Meperidine	Avoid, especially in patients with CKD	Higher risk of neurotoxicity including delirium
Anticholinergics	Scopolamine Promethazine *(Phenergan)* Prochlorperazine *(Compazine)* Diphenhydramine *(Benadryl)* Hydroxyzine *(Vistaril)* Tricyclic Antidepressants	Avoid	Increased risk of over-sedation, central anti-cholinergic side effects (including delirium)
Other psychoactive medications	Steroids *(dexamethasone)* Antipsychotics	Avoid or use cautiously	Increased risk of delirium

Preop

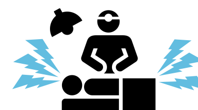
If patient is ≥ 65 years ***or*** has an AWOL-S predicted risk of delirium ≥ 5%:

- Administer PO acetaminophen
- Use caution with Potentially Inappropriate Medications (refer to table)
- Keep glasses, hearing aids, and dentures in a separate bag within patient belongings for easy access

Intraop

Patient safety and risk mitigation

- Consider age-related alterations in physiology when choosing anesthetic technique
- Account for reduction in GFR in medication dosing
- Continue necessary cardiac medications pre- and intraoperatively
- Maintain hemodynamic stability
- Carefully position and generously pad high pressure areas to avoid skin breakdown or nerve injury
- Use goal-directed fluid management strategy targeting euvolemia
- Provide pre-warming and active warming to target normothermia
- Consider depth of anesthesia monitoring when available



Pain management

- Use multimodal (opioid-sparing) analgesia
  - Consider non-opioid adjuncts when appropriate (ex: acetaminophen, lidocaine infusion, low-dose ketamine infusion, magnesium infusion)
- Use neuraxial or regional techniques when appropriate

Postop

- Use Delirium Risk PACU orderset to order delirium prevention interventions and antiemetics for patients with high delirium risk
- Sign out delirium risk to PACU nurse and surgical team
- Monitor for signs of active delirium and treat accordingly