Perioperative Delirium Prevention and Treatment Pathway

General principles

1. Use non-pharmacologic prevention measures
2. Avoid polypharmacy to the extent possible
3. Communicate with preop/PACU nurses and surgical team

Delirium risk stratification and prevention

If Preop AWOL score ≥ 2

Intraop → Implement Intraop bundle (see next page)

PostOp →
• Complete Delirium Prevention 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, UTx, cultures, EKG, Chest X-ray

2. Evaluate for reversible precipitating or contributing factors
   • Drugs/Medications/polypharmacy
   • Electrolytes (Na, Ca, acid-base disorders), Environment change
   • Lack of drugs (withdrawal), Lack of sleep
   • Infection, Immobility (catheters, feeding tubes), Iatrogenic
   • Restraints, Reduced sensory input (vision, hearing), Respiratory (hypoxemia/hypercarbia)
   • Intracranial (stroke, bleed, seizure, meningitis)
   • Urinary Retention, constipation, Uncontrolled pain
   • Metabolic (hypoxia, hypercarbia, uremia, hepatic encephalopathy, thyroid)

3. Review medications
   Discontinue contributing medications when possible
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 to the extent possible

PONV management

<table>
<thead>
<tr>
<th>Preferred order of anti-emetics</th>
<th>Avoid (when possible)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ondansetron (4 mg IV q8h)</td>
<td>Dexamethasone (especially doses &gt;4 mg)</td>
</tr>
<tr>
<td>Haloperidol (0.5 – 1 mg q6 hours)</td>
<td>Diphenhydramine (Benadryl)</td>
</tr>
<tr>
<td>Propofol infusion</td>
<td>Hydroxyzine (Vistaril)</td>
</tr>
<tr>
<td>Metoclopramide (5 mg IV once)</td>
<td>Lorazepam (Ativan)</td>
</tr>
<tr>
<td></td>
<td>Prochlorperazine (Phenergan)</td>
</tr>
<tr>
<td></td>
<td>Scopolamine</td>
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</tbody>
</table>

Medication management

<table>
<thead>
<tr>
<th>Medication class</th>
<th>Examples</th>
<th>Precautions</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSAIDs</td>
<td>Ketorolac, Diclofenac, Ibuprofen</td>
<td>Avoid when GFR &lt; 30 (Stage IV – V CKD) or in AKI</td>
<td>Increased risk of GI bleeding, increased risk of AKI (for ketorolac specifically)</td>
</tr>
<tr>
<td>Sedative Hypnotics</td>
<td>Benzodiazepines</td>
<td>Reduced dose or avoid when GFR &lt; 60, Avoid in patients with ESRD</td>
<td>Increased risk of oversedation</td>
</tr>
<tr>
<td>Gabapentin</td>
<td>Avoid, especially in patients with CKD, ESRD</td>
<td>Higher risk of neurotoxicity including delirium</td>
<td></td>
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<tr>
<td>Meperidine</td>
<td>Avoid</td>
<td>Increased risk of oversedation, central anticholinergic side effects (including delirium)</td>
<td></td>
</tr>
<tr>
<td>Anticholinergics</td>
<td>Scopolamine, Promethazine (Compazine), Prochlorperazine (Phenergan), Diphenhydramine (Benadryl)</td>
<td>Avoid</td>
<td></td>
</tr>
<tr>
<td>Other psychoactive medications</td>
<td>Steroids (dexamethasone)</td>
<td>Avoid or use cautiously</td>
<td>Increased risk of delirium</td>
</tr>
</tbody>
</table>

Preop

- If AWOL ≥2: Implement Intraop bundle
- Administer PO acetaminophen
- Use caution with potentially deliriogenic medications (refer to table)
- Keep glasses, hearing aids, and dentures in 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
- Carefully position and generously pad high pressure areas to avoid skin breakdown or nerve injury
- Use goal-directed fluid management strategy targeting euvolemia
- Continue necessary cardiac medications pre- and intraoperatively
- Provide pre-warming and active warming to target normothermia

Pain management
- Use multimodal (opioid-sparing) analgesia
- Consider non-opioid adjuncts when appropriate (ex: acetaminophen, lidocaine infusion, low-dose ketamine infusion, magnesium infusion)
- Use regional/neuraxial anesthesia when possible

Postop

- Use PACU Orderset for Adults at Risk of Delirium for all patients ≥ 65 or AWOL ≥2
- Sign out delirium risk to PACU nurse
- Monitor for signs of active delirium and treat accordingly