**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
   - **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** (hypoxemia, hypercarbia, glucose, uremia, hepatic encephalopathy, thyroid dysfunction)

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

### PONV management

<table>
<thead>
<tr>
<th>Preferred order of anti-emetics</th>
<th>Avoid (when possible)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Preventive measures: propofol infusion, aprepitant (if very high risk)</td>
<td>• Dexamethasone (especially doses &gt; 4 mg)</td>
</tr>
<tr>
<td>• Ondansetron (4 mg IV q8h)</td>
<td>• Diphenhydramine (Benadryl)</td>
</tr>
<tr>
<td>• Haloperidol (0.5 – 1 mg q6h)</td>
<td>• Hydroxyzine (Vistaril)</td>
</tr>
<tr>
<td>• Metoclopramide (5 mg IV once)</td>
<td>• Lorazepam (Ativan)</td>
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<tr>
<td>• Prochlorperazine (Compazine)</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></td>
<td></td>
<td>• Use caution with repeated doses</td>
<td></td>
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<tr>
<td>Sedative Hypnotics</td>
<td>Benzodiazepines</td>
<td>Avoid (except for specific indications such as seizure)</td>
<td>Increased risk of delirium, cognitive impairment, falls, fractures</td>
</tr>
<tr>
<td>Gabapentin</td>
<td></td>
<td>• Reduce dose or avoid when GFR &lt; 60</td>
<td>Increased risk of over-sedation</td>
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<td></td>
<td></td>
<td>• Avoid in patients with ESRD</td>
<td></td>
</tr>
<tr>
<td>Meperidine</td>
<td></td>
<td>Avoid, especially in patients with CKD</td>
<td>Higher risk of neurotoxicity including delirium</td>
</tr>
<tr>
<td>Anticholinergics</td>
<td>Scopolamine, Promethazine (Phenergan), Prochlorperazine (Compazine) Diphenhydramine (Benadryl), Hydroxyzine (Vistaril), Tricyclic Antidepressants</td>
<td>Avoid</td>
<td>Increased risk of over-sedation, central anti-cholinergic side effects (including delirium)</td>
</tr>
<tr>
<td>Other psychoactive medications</td>
<td>Steroids (dexamethasone), Antipsychotics</td>
<td>Avoid or use cautiously</td>
<td>Increased risk of delirium</td>
</tr>
</tbody>
</table>

## 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

## 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