AAHKS
AMERICAN ASSOCIATION OF HIP AND KNEE SURGEONS

Clinical Practice Guideline: Gabapentinoids in Total Joint Arthroplasty

An Evidence-Based Synthesis for Perioperative and Post-Discharge Protocols

Joint recommendations by AAHKS, AAOS, The Hip Society, The Knee Society, and ASRA. (March 2020)

Common Clinical Assumption

All **gabapentinoids are equally effective** for perioperative pain management and **opioid sparing** in primary Total Joint Arthroplasty (TJA).

VS.

The Evidence Reality

Systematic review of 13 high-quality RCTs reveals a stark divergence in efficacy:

Pregabalin demonstrates **targeted benefits for opioid reduction**, while **Gabapentin** broadly fails to **show efficacy** in TJA.

This presentation distills the multidisciplinary guidelines into an actionable clinical pathway, optimizing efficacy while mitigating severe, dose-dependent respiratory risks.

Guideline Assessment Scope

1. Perioperative Phase
(Pre-op to 72 hours)

2. Hospital Discharge
(Transition of care)

3. Post-Discharge Recovery
(Weeks 1-6 post-op, evaluating chronic/neuropathic pain)

Pain Scores

Opioid Consumption

Postoperative Complications
(Nausea, Sedation)

Phase 1: Perioperative (Pre-op to 72 hours) | 2. Hospital Discharge | 3. Post-Discharge Recovery | 4. Chronic/ Neuropathic Pain

Strength: STRONG

Gabapentin Fails to Reduce Pain or Opioid Use in the Perioperative Setting

The Verdict Scorecard (7 High-Quality Studies vs. Placebo)

1. **No impact** on postoperative pain at all time points <3 days.
2. **Direct meta-analysis** confirms **no impact** on morphine consumption at 72 hours.
3. **No difference** in rates of nausea, vomiting, pruritus, dizziness, or sedation vs. placebo.
4.

Key Takeaway: Perioperative administration of Gabapentin does not yield measurable analgesic or opioid-sparing benefits in primary TJA.

The Evidence Dashboard

Phase 1: Perioperative (Pre-op to 72 hours) | 2. Hospital Discharge (Transition of care) | 3. Post-Discharge Recovery (Weeks 1-6 post-op) | 4. Chronic/Neuropathic Pain

Strength: STRONG

Pregabalin Reduces Opioid Consumption and Nausea, but Increases Sedation

The Verdict Scorecard (6 High-Quality Studies vs. Placebo)

Moderately reduces overall **opioid consumption.**	**Mixed** Inconsistent impact; 3 studies show no difference, 2 show reduction.
Direct meta-analysis (4 studies) proves **reduced incidence of postoperative nausea.**	Direct meta-analysis (3 studies) confirms **moderate increase in sedation risk.**

The Evidence Dashboard

Phase 1: Perioperative (Pre-op to 72 hours) | 2. Hospital Discharge (Transition of care) | **Phase 2: Post-Discharge (Weeks 1-6 post-op)** | 4. Chronic/Neuropathic Pain

Strength: STRONG

Post-Discharge Gabapentin Shows No Impact on Chronic or Neuropathic Pain

No impact on **postoperative pain** across all three studies.

Petersen et al. found **no effect** on **chronic** or **neuropathic pain** at 3-4 years postoperatively.

No difference in **opioid consumption** at 6 days postoperatively.

Clinical Bottom Line: Discharging patients on short courses of Gabapentin does not improve long-term pain trajectories.

The Evidence Dashboard

Strength: STRONG

Phase 1: Perioperative (Pre-op to 72 hours)	2. Hospital Discharge (Transition of care)	**Phase 2: Post-Discharge (Weeks 1-6 post-op)**	4. Chronic/Neuropathic Pain

Pregabalin Reduces Long-Term Neuropathic Pain and Outpatient Opioid Use

	Favorable reductions in pain scores between 3 days and 6 months postoperatively.
	Lower rates of neuropathic pain at 6 months compared to placebo (Buvanendran et al.).
	Patients consumed fewer opioids at 1 week **postoperatively** (Clarke et al.).

The Diagnostic Matrix: Gabapentin vs. Pregabalin in TJA

Clinical Endpoint	Gabapentin	Pregabalin
Perioperative Opioid Reduction	**NO**	**YES** (Moderate)
Perioperative Pain Reduction	**NO**	**INCONSISTENT**
Post-Discharge Neuropathic Pain	**NO** (at 3-4 yrs)	**YES** (at 6 months)
Distinct Side Effects	**Neutral vs. Placebo**	**Reduced Nausea, Increased Sedation**

Clinical consensus overwhelmingly favors Pregabalin over Gabapentin for targeted pain and opioid reduction in the TJA pathway.

The Evidence Dashboard

Strength: MODERATE

Phase 1: Perioperative (Pre-op to 72 hours)	2. Hospital Discharge (Transition of care)	Phase 2: Post-Discharge (Weeks 1-6 post-op)	4. Chronic/Neuropathic Pain

The Dosing Variable: Higher Doses Do Not Yield Higher Efficacy

Low Dose
e.g., Pregabalin 75mg BID

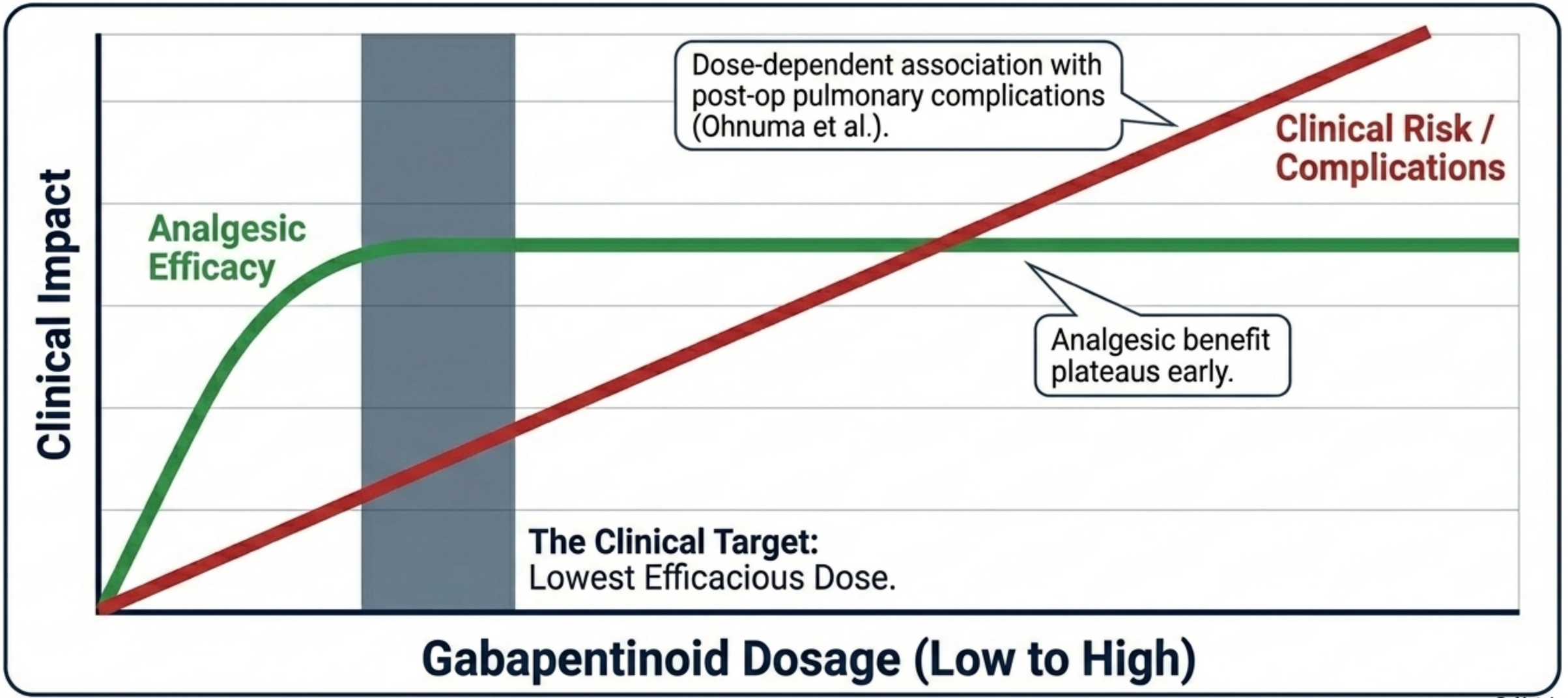
NO DIFFERENCE in postoperative pain.
NO DIFFERENCE in opioid consumption.

High Dose
e.g., Pregabalin 150mg BID

High dose associated with **increased** frequency of **complications** (e.g., constipation).

Guideline Directive: When gabapentinoids are utilized after primary TJA, the lowest clinically efficacious dose MUST be used to minimize the risk of complications.

The Dose-Response Disconnect: Flattening the Efficacy Curve

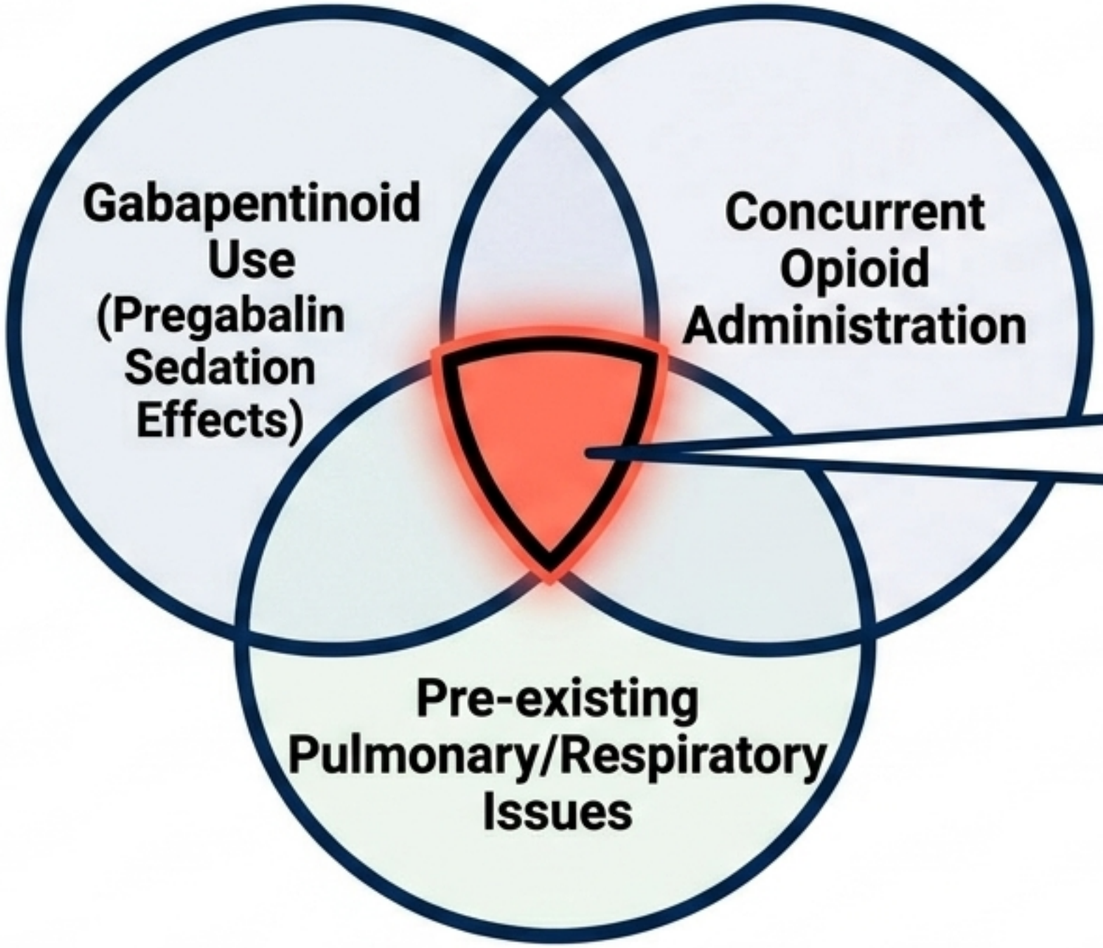


Severe Safety Constraints: Respiratory Depression

The FDA warns that gabapentinoids co-used with other central nervous system depressants (such as opioids) or in patients with underlying respiratory issues may further exacerbate respiratory depression, increasing the risk of opioid overdose and death.

Contextual Note: The use of gabapentinoids for acute postoperative pain is an **OFF-LABEL** indication. It is the prescribing physician's responsibility to ascertain FDA clearance status.

The Depressant Multiplier Effect



Exponential Risk of Severe Respiratory Depression & Overdose.

Supporting Data Callout: Recent database studies confirm a dose-dependent association between gabapentinoids and postoperative pulmonary complications after THA/TKA.

Geriatric Vulnerability: Sedation and Cognitive Risks

⚠ Increased Sedative Sensitivity

Pregabalin specifically causes **increased sedative effects** in the elderly.

⚠ Cognitive Impact

Gabapentinoids lead to an **increased risk** of **postoperative confusion** among older populations.

Clinical Directive: It is the consensus of the workgroup that gabapentinoids must be used with EXTREME CAUTION in elderly patients, rigorously adhering to lowest-dose principles.

Knowledge Gaps: The Vectors for Future Research

The Protocol Mechanics

Unknown optimal timing (when to start), frequency, and total duration of Pregabalin treatment after primary TJA.

Direct Head-to-Head Data

Lack of well-powered, 3-group prospective RCTs directly comparing Gabapentin vs. Pregabalin vs. Placebo under standardized anesthetic regimens.

Granular Safety Profiles

Need for high-quality data specifically tracking respiratory depression rates when combined with opioids, isolated by age demographics.

The Unified TJA Gabapentinoid Protocol

The Master Clinical Balancing Act

Rule 1:
DRUG SELECTION

If utilizing a gabapentinoid, favor PREGABALIN. Gabapentin lacks evidenced efficacy for post-op pain or opioid reduction in TJA.

Rule 2:
DOSE OPTIMIZATION

Prescribe the ABSOLUTE LOWEST clinically efficacious dose. Higher doses increase complications without improving analgesia.

Rule 3:
RISK MITIGATION

Exercise extreme caution regarding respiratory depression and sedation—specifically in the elderly, patients with pulmonary comorbidities, and when administered concurrently with opioids.

Goal: Targeted neuropathic pain relief and opioid reduction without triggering the depressant multiplier.