**Hospital Emergency Care – Hypokalemic Periodic Paralysis Attack AAttackAttack**

**HYPOKALEMIC PERIODIC PARALYLSIS** is a rare skeletal muscle channelopathy resulting from mutations in calcium or sodium ion channels. Patients exhibit sudden episodes of profound, generalized or focal, flaccid muscle weakness associated with low blood potassium levels. Note: This state may occur with only a mild drop in serum potassium.1 Treatment should be guided by patient response and follow a stepwise approach, with emphasis on relieving acute symptoms, managing complications, and preventing future attacks.2

**UPON ARRIVAL:**

NOTE: Even though the patient may visually appear stable, their condition may deteriorate rapidly. They should not be left alone as respiratory and cardiac arrest are possible. Patients may present or progress to full body paralysis and appear to be unconscious. Do not assume they cannot feel pain or hear conversations as they are awake and aware. Needle pricks and sternum rubs **WILL** cause pain and are **NOT** a reliable method to establish responsiveness.

* Cardiac Monitoring is required.
* Draw electrolytes **STAT** or use bedside ISTAT to determine serum K+ level.
	+ NOTE: Each patient has their own target level. K+ can be in normal laboratory range as It’s the blood to muscle K+ shift that creates the attack.2,3,4,5
* Potassium supplementation is a priority.
	+ Oral K+ route is preferred – A fast acting aqueous potassium taken orally is the first choice.
	+ Intravenous (IV) potassium chloride (KCI) – If patient can’t swallow or oral route has been exhausted, IV KCI is required.
		- * + **Do not** **use dextrose** **solution** **(main infusion or K+ rider)** as this may worsen attack3.4 Normal Saline(NS) as main infusion may worsen attack in some individuals, therefore fluid choice should be guided by the patient’s experience. Anecdotally, the K+ content, and lower osmolality, may make LR the preferred solution.
				+ Usual infusion rate is 10 mEq/hour. Heart dysrhythmias and respiratory compromise may require temporary higher infusion rate but not to exceed 20-25 mEq/hour.3,4
				+ Consider switching to oral supplementation once patient can swallow safely.
	+ Monitoring - Recheck K+ level often during IV K+ administration. This is an intracellular shift, not a loss/deficit of potassium. As the attack subsides, K+ returns to the serum and rebound hyperkalemia may supervene. As symptoms resolve, taper K+ supplementation accordingly.1,2,3,4,5
* Keep patient warm (warming blankets may be necessary). Being cold can worsen attack.
* Depending on severity of attack – may need to lie patient in coma position to avoid aspiration. Support head accordingly.

**IN THE EVENT OF TRAUMA OR ACUTE ILLNESS:** Do NOT use Succinylcholine4

**LOCAL ANESTHETICS:** Do NOT use Epinephrine. Lidocaine works inconsistently. Consider Ropivacaine or Bupivacaine without Epinephrine.4

**GENERAL ANESTHETICS:** Refer to Anesthesia Quick Reference Guide. If not with patient, can be found at:

 <https://hkpp.org/anesthesia-quick-reference-guides/> as well as: [www.periodicparalysis.org](http://www.periodicparalysis.org)

**References**

1. Jitpimolmard, N., Matthews, E. & Fialho, D. Treatment Updates for Neuromuscular Channelopathies. *Curr Treat Options Neurol* 22, 34 (2020). <https://doi.org/10.1007/s11940-020-00644-2>
2. Phuyal P, Bhutta BS, Nagalli S. Hypokalemic Periodic Paralysis, [Updated 2024 Mar 19] In: StatPearls [Internet] https//www.ncbi.nlm.nih.gov/books/NBK559178/March 19,2024
3. Levitt JO. Practical aspects in the management of hypokalemic periodic paralysis. (published correction appears in *J Transl Med*. 2014;12:198. (dosage error in article text). *J Transl Med*. 2008;6:18 doi:101186/1479-5876-6-18
4. William Harr DNP, CRNA Anesthesia for the Adult Patient with Hypokalemic Periodic Paralysis. Nov 2022 https://perodicparalysis.org/
5. Matthews E, Holmes S, Fialho D, Skeletal muscle channelopathies*: a guide to diagnosis and management*  Pract Neurol 2021;21:196-205