

# Critical Illness Polyneuromyopathy and the Diagnostic Dilemma

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## ABSTRACT

Critical illness polyneuromyopathy is a growing concern in intensive care units, but its presentation within 24–48 hours of admission is very unusual. Such presentations should be carefully scrutinized, especially in the presence of severe hypokalemia.

**Keywords:** Critical illness polyneuromyopathy, Diabetic ketoacidosis, Hypokalemia.

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Sir,

We read with immense interest the article titled “An Unusual Case of Critical Illness Polyneuromyopathy” by Mahashabde et al.<sup>1</sup> We appreciate that critical illness polyneuromyopathy is a growing concern in intensive care units leading to difficult weaning with prolonged hospitalizations. But there are some major concerns in this case report which we want to bring to notice:

- The patient was diagnosed with diabetic ketoacidosis (DKA) precipitated by infection. Dyselectrolytemia in the form of hyperchloremic acidosis, hypokalemia, and hypophosphatemia are known complications of DKA management. The potassium level of 1.9 mEq/L with pH of 6.9 at admission suggests severe potassium depletion. Hypokalemia further worsens as the acidosis gets corrected with fluid and insulin therapy due to transcellular shift. Severe hypokalemia may itself present as acute flaccid paralysis.<sup>2</sup>
- Nerve conduction studies in severe hypokalemia have shown severe reduction in amplitudes of the compound muscle action potential with rarely reduced sensory nerve action potential.<sup>3</sup> These electrophysiological findings mimic axonal neuropathy.
- According to one study, serum CPK was elevated in 68% of cases of hypokalemic paralysis with significantly higher values in the secondary group compared to the primary hypokalemic paralysis group.<sup>4</sup>
- The authors themselves quoted that critical illness polyneuropathy may present as early as 72 hours of ICU admission, but the flaccid paralysis requiring intubation was evident on the second day of admission itself in the present case report.<sup>5</sup>
- Whether magnesium levels were checked and corrected in case of persistent hypokalemia?
- What were the phosphate levels as diabetic ketoacidosis is often associated with hypophosphatemia leading to weaning difficulties?
- Thus the flaccid paralysis with associated laboratory and electrophysiological study findings presenting between 24 hours

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to 48 hours of admission with low potassium levels are better explained by hypokalemia rather than an early onset variant of critical illness polyneuromyopathy. However, critical illness polyneuropathy cannot be denied in the later phase of illness when the patient had ventilator-associated pneumonia due to prolonged ventilation.

## REFERENCES

1. Mahashabde M, Chaudhary G, Kanchi G, Rohatgi S, Rao P, Patil R, et al. An unusual case of critical illness polyneuromyopathy. *Indian J Crit Care Med* 2020;24(2):126–128. DOI: 10.5005/jp-journals-10071-23346.
2. Chandramohan G, Dineshkumar T, Arul R, Seenivasan M, Dhanapriya J, Sakthirajan R, et al. Spectrum of hypokalemic paralysis from a tertiary care center in India. *Indian J Nephrol* 2018;28(5):365–369.
3. Rajshekher G, Kumar S, Prabhakar S. Reversible electrophysiological abnormalities in hypokalemic periodic paralysis. *Indian Pediatr* 2008;45(1):54–55.
4. Kayal AK, Goswami M, Das M, Jain R. Clinical and biochemical spectrum of hypokalemic paralysis in north: East India. *Ann Indian Acad Neurol* 2013;16(2):211–217. DOI: 10.4103/0972-2327.112469.
5. Shepherd S, Batra A, Lerner DP. Review of critical illness myopathy and neuropathy. *Neurohospitalist* 2017;7(1):41–48. DOI: 10.1177/1941874416663279.