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Acute neuromuscular weakness in the intensive care unit

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Background: In intensive care unit, a patient is noted to have generalized flaccid limb weakness with–and sometimes without–diaphragm weakness while undergoing treatment of a non-neurologic critical illness. These disorders are somewhat broadly categorized as critical illness polyneuropathy (CIP), critical illness myopathy (CIM), and prolonged neuromuscular junction (NMJ) blockade. Prolonged NMJ blockade has become less common, likely due to the reduced use of paralytic agents in ICUs.

Clinical Presentation: Patients with CIP and CIM usually present after 1–2 weeks of systemic inflammatory response syndrome (SIRS) or multiple organ dysfunction syndrome (MODS) with failure to wean from mechanical ventilation or with diffuse limb weakness, or both. CIM is usually recognized days to weeks after exposure to intravenous corticosteroid (IVCS) with or without neuromuscular junction blocking agents (NMBAs). Prolonged neuromuscular junction blockade also presents as flaccid generalized weakness with failure to wean and areflexia that persists (usually for days) after NMBAs are discontinued.

Management and Prognosis: All critically ill patients, including those with neuromuscular weakness, require adequate nutritional intake, correction of underlying metabolic disorders such as hypokalemia and hypophosphatemia, and aggressive treatment of underlying infections since all of these metabolic abnormalities can aggravate weakness. In CIP, there are no proven specific therapies. There is no specific treatment for CIM, but prevention is ideal if possible. Limiting intravenous corticosteroids or paralytic agents in ICU patients is recommended in order to make occurrence less likely. Prolonged Neuromuscular Junction Blockade is self-limited.