

Acute neuromuscular disease

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Disclosures

- Educational talks for Alnylam, Teva, Merck, Pfizer
- Consulting for Algiavax, Bayer, Grifols, Immunic, Ipsen, Merz, Roche, Takeda
- Participation in clinical trials for Air Liquide, Novartis, UCB

Agenda

- GBS and its mimics
 - Porphyria
 - GBS-like disease induced by cancer therapy
- Myasthenic crisis and LEMS
- Myositis

Learning objectives

- Be aware of the differential diagnosis of acute neuromuscular weakness
- Obtain insight into the most frequent types

Peripheral neuropathy/polyradiculopathy

- GBS
- Porphyria
- Diphtheria
- CMV polyradiculopathy
- Neuroborreliosis
- Toxins (heavy metals, e.g., arsenic, mercury, hexacarbon, drug intoxication, organophosphate, Buckthorn)
- Critical illness polyneuropathy
- Drug-induced GBS-like polyradiculoneuropathy
- Tick paralysis
- Vasculitic neuropathy

Anterior horn cell disorders

- Poliomyelitis
- West Nile virus

Neuromuscular junction disorders

- Myasthenia gravis
- Lambert-Eaton syndrome
- Neuroparalytic envenomation (e.g., tick and snake bites)
- Botulism
- Organophosphate and carbamate
- Hypermagnesemia
- Prolonged neuromuscular blockade
- Overdose of anticholinesterases

Neuromuscular junction disorders

- Polymyositis, dermatomyositis, infectious myositis (e.g., dengue myositis)
- Periodic paralysis (hypokalemic: Hereditary and secondary, hyperkalemic)
- Hypophosphatemia
- Critical illness myopathy
- Acute rhabdomyolysis

Recommended reading

1. Dalakas MC. Progress in the therapy of myasthenia gravis: getting closer to effective targeted immunotherapies. *Curr Opin Neurol* 2020;33:545-52.
2. Damian MS, Srinivasan R. Neuromuscular problems in the ICU. *Curr Opin Neurol* 2017;30:538-44.
3. Gonzalez-Mosquera LF, Sonthalia S. Acute Intermittent Porphyria. *StatPearls*. Treasure Island (FL): StatPearls Publishing Copyright © 2021, StatPearls Publishing LLC.; 2021.
4. Leonhard SE, Mandarakas MR, Gondim FAA, Bateman K, Ferreira MLB, Cornblath DR, van Doorn PA, Dourado ME, Hughes RAC, Islam B, Kusunoki S, Pardo CA, Reisin R, Sejvar JJ, Shahrizaila N, Soares C, Umapathi T, Wang Y, Yiu EM, Willison HJ, Jacobs BC. Diagnosis and management of Guillain-Barré syndrome in ten steps. *Nat Rev Neurol* 2019;15:671-83.
5. Nayak R. Practical approach to the patient with acute neuromuscular weakness. *World J Clin Cases* 2017;5:270-9.
6. O'Malley R, Rao G, Stein P, Bandmann O. Porphyria: often discussed but too often missed. *Pract Neurol* 2018;18:352-8.
7. Tham SL, Prasad K, Umapathi T. Guillain-Barré syndrome mimics. *Brain Behav* 2018;8:e00960.
8. Wijdicks EF. Management of acute neuromuscular disorders. *Handb Clin Neurol* 2017;140:229-37.
9. Wijdicks EF, Klein CJ. Guillain-Barré Syndrome. *Mayo Clin Proc* 2017;92:467-79.
10. GBS100: Celebrating a century of progress in Guillain-Barré syndrome. Eds. Hugh J Willison and John A Goodfellow. Published by Peripheral Nerve Society