



Guidance Statement On The Assessment And Treatment Of Neurologic Dysfunction In Patients Subsequent To COVID-19

American Academy of Physical Medicine and Rehabilitation, 2023

This is guidance for physicians to use for treating their patients that have neuropathy caused by Covid-19.

Neurological symptoms occur in approximately 80% of hospitalized patients during the acute phase of COVID-19 infection. The most prevalent neurologic symptoms that remain after 3–4 weeks from the initial infection include “brain fog” (81%), headache (68%), numbness/tingling (60%), dysgeusia/loss of sense of taste (59%), anosmia/loss of sense of smell (55%), and myalgias/muscle pain (55%). This guidance statement focuses on the neurologic sequelae of PASC (post-acute sequelae of SARS-CoV-2/COVID-19 infection), including headaches, neuropathies and neuropathic pain, muscular pain/weakness and tremors, and cranial nerve conditions. (Editor: I have included only the guidance assessment and treatment of neuropathy and neuropathic pain, i.e., Table 9)

Assessment And Treatment Of Neuropathy And Neuropathic Pain

Signs:

- Weakness
- Gait instability
- Sensory testing abnormalities
- Muscle atrophy
- Change in mobility

Symptoms:

- Numbness
- Sensory changes
- Nerve pain
- Burning
- Tingling
- Fall
- Vibration
- Sharp shooting pain
- Hypersensitivity to touch
- Temperature instability with hot/cold feeling
- Phantom pain or sensations/itching

Patient History and Evaluation:

- Assess for a personal history of diabetes, chemotherapy, alcohol use, autoimmune disorders, peripheral nerve injury or compression
- Assess for prolonged hospital stay, hospital stay including intensive care unit stay and/or prone positioning
- Manual muscle testing, with a focus on pattern of weakness (ie, proximal versus distal vs. focal vs. nerve distribution vs. dermatome)
- Sensory testing including light touch, pinprick vibration, proprioception, temperature
- Muscle stretch reflex testing
- Gait assessment, tandem gait
- Postural stability and alignment, dynamic balance (sitting or standing)

Additional Studies to Consider for Differential Diagnosis:

- Consider creatine phosphokinase, ferritin level, HIV and rapid plasma reagin, serum protein electrophoresis with immunofixation, methylmalonic acid may be considered in specific populations.
- Consider electromyography/nerve conduction studies (EMG/NCS) testing to identify and classify focal or diffuse neuropathy (motor/sensory, axonal/demyelinating)
- Consider small fiber neuropathy skin biopsy for intraepidermal nerve fiber density (may be done by neurology and trained internal medicine or dermatology clinicians)
- Magnetic resonance imaging of spine can be considered in selected cases based on EMG/NCS or for presence of cord involvement (sensory level, bowel/bladder changes, increased reflexes) or look for root enhancement in polyradiculoneuropathy (chronic or acute inflammatory demyelinating polyneuropathy)

Initial Treatment Approach:

- Consider use of pain management strategies for neuropathic pain (gabapentin, Lyrica, Cymbalta, Nortriptyline, topical capsaicin, dry needling, heat, ultrasound)

Reference

Moisset X, Bouhassira D, Attal N. French guidelines for neuropathic pain: an update and commentary. *Rev Neurol (Paris)*. 2021;177(7):834-837. doi:10.1016/j.neurol.2021.07.004

- Consider use of “Evidence-based pain medicine for primary care physicians” as an evidence-based resource for pain management.

Reference

Owen GT, Bruel BM, Schade CM, Eckmann MS, Hustak EC, Engle MP. Evidence-based pain medicine for primary care physicians. *Proc (Bayl Univ Med Cent)*. 2018;31(1):37-47. doi:10.1080/08998280.2017.1400290

Referral Options:

- Refer to neurology for significant neuropathy, progressive weakness, or worsening gait instability
- Refer to pain management for severe symptoms that do not respond to first-line medication therapy
- Refer to orthotist for joint protection or stabilization; compression garments
- Refer to physical therapy for strengthening, balance retraining, gait training, stretching (muscular and neural tension), Aquatic therapy and patient education on pain.
- Refer to occupational therapy for desensitization, functional skills training including safety and compensatory strategies for sensory changes, stretching (muscular and neural tension), and patient education on pain.
- Refer to speech language pathology/therapy for focal exercises for facial or cervical muscles, dysphagia therapy, voice.

Reference

Esther Melamed MD PhD et al. Multidisciplinary collaborative consensus guidance statement on the assessment and treatment of neurologic sequelae in patients with post-acute sequelae of SARS-CoV-2 infection (PASC). *American Academy of Physical Medicine and Rehabilitation*. 2023; 1-23. doi:10.1002/pmrj.12976