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MADISON NEUROLOGY LLC

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Neurology Care 7 days a Week. Because Your Brain Matters.

Paraneoplastic Neurological Syndromes

Patient education guide · Demyelinating & Autoimmune · Madison Neurology LLC

What is it?

Paraneoplastic neurological syndromes are rare disorders in which the immune system's response to a cancer — not the cancer itself or its spread — damages the nervous system. Neurological symptoms often appear before the cancer is even found, making them an important early warning that prompts a cancer search. Any part of the nervous system can be affected.

How does it happen?

Certain cancers (small-cell lung, breast, ovarian, thymoma, lymphoma, testicular) express proteins similar to those in the nervous system; the immune attack on the tumor cross-reacts with neural tissue. Onconeural antibodies (anti-Hu, anti-Yo, anti-Ri, Ma2, and others) mark specific syndromes. Some syndromes also respond to immune-checkpoint cancer therapies.

Common symptoms

- Rapidly progressive symptoms over weeks to months — faster than typical degenerative disease
- Cerebellar degeneration: severe imbalance and coordination loss
- Sensory neuronopathy: widespread numbness and loss of balance from sensory nerve damage
- Limbic encephalitis: memory loss, confusion, seizures
- Stiff-person syndrome, opsoclonus-myoclonus, or LEMS-like weakness, depending on the antibody

How is it diagnosed?

Diagnosis combines the clinical pattern with onconeural antibody testing (blood and spinal fluid), MRI/EEG/EMG as appropriate, and an aggressive search for the underlying tumor — CT, PET, mammography, pelvic or testicular ultrasound. If the first search is negative but suspicion is high, it is repeated periodically.

How is it treated?

Two tracks simultaneously: find and treat the cancer (the most important step for stabilizing the neurology), and immunotherapy (steroids, IVIG, plasma exchange, rituximab, cyclophosphamide) to calm the immune attack. Some syndromes (LEMS, stiff-person, certain encephalitides) respond well; others (e.g., anti-Hu sensory neuronopathy) stabilize but recover incompletely. Rehabilitation and symptom treatment (for pain, spasms, mood) run throughout.

What does the future hold?

Prognosis depends on the syndrome and the cancer. Neurological stabilization often follows successful cancer treatment; early treatment offers the best chance of limiting damage. Some patients recover substantially; others stabilize with residual deficits. Coordinated oncology-neurology care is essential.

Questions patients commonly ask

Q: Does this mean the cancer has spread to my brain?

A: No — paraneoplastic damage is immune-mediated 'friendly fire,' not metastasis. Often no tumor is visible in the nervous system at all.

Q: Why treat the cancer to help my nerves?

A: The tumor is driving the immune response; removing or controlling it is the most effective way to stop the neurological attack.

Q: What if no cancer is found?

A: A minority of patients never have a tumor found (some tumors are destroyed by the very immune response they provoked); surveillance continues periodically while immunotherapy manages the syndrome.

National support groups & resources

- **Autoimmune Encephalitis Alliance** — aealliance.org
- **National Organization for Rare Disorders** — rarediseases.org — 1-800-999-6673
- **American Academy of Neurology — Brain & Life patient resources** — brainandlife.org

(Organization contact details were current at the time of compilation; please verify online.)

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