UNCOVERING LEMS IN YOUR PRACTICE

Could your patient with SCLC have a co-occurring paraneoplastic neurologic syndrome, such as Lambert-Eaton myasthenic syndrome (LEMS)?

Paraneoplastic syndromes are clinical syndromes characterized by a recognizable grouping of signs and symptoms in patients with cancer. They affect about 1 in 10 patients with lung cancer, including small cell lung cancer (SCLC). Detecting them **earlier** may help improve patients' lives. 4,5

SCLC is most commonly associated with these paraneoplastic neurologic syndromes²:

- LEMS
- Sensory neuropathy
- Cancer-associated retinopathy
- Paraneoplastic cerebellar degeneration
- Paraneoplastic encephalomyelitis

Note: Although myasthenia gravis (MG) is not a paraneoplastic syndrome commonly associated with SCLC, its symptoms are often confused with LEMS symptoms.



LEMS is the most common antibody-mediated paraneoplastic neurologic syndrome associated with SCLC.⁶

THE FACTS ON LEMS



LEMS is a devastating and progressive neuromuscular disorder4



LEMS occurs in ~3% of SCLC patients^{7,8}



Left untreated, LEMS patients will experience a progressive loss of muscle strength and functional mobility, which can significantly impair their quality of life and independence⁴

• LEMS patients with SCLC reported **more functional impairment** at any point in their disease course vs patients who only had LEMS⁹



LEMS symptoms can appear ≥5 years before, after, or at the time of diagnosis¹⁰



An evaluation of oncology healthcare claims data between 2017 and 2022 shows that >90% of LEMS cases in SCLC patients may still be undiagnosed.¹¹

SUSPECT YOUR PATIENT MAY HAVE A PARANEOPLASTIC SYNDROME?

Have your patient complete the **Health Assessment Checklist** on page 5 during their appointment and review the results with them. Refer to the chart on the back of the folder to help determine which syndrome they may have and how to test for it.

References: 1. Patel P. Pobre T. Electrodiagnostic evaluation of neuromuscular junction disorder. National Library of Medicine. Accessed February 12, 2025. https://www.ncbi.nlm.nih.gov/books/NBK562302/. 2. Spiro SG, Gould MK, Colice GL. Initial evaluation of the patient with lung cancer. symptoms, signs, laboratory tests, and paraneoplastic syndromes. 2014;5(3):7492-160S. 3. Kanaji N, Watanabe N, Kita N, et al. Paraneoplastic syndromes associated with lung cancer. World J Clin Oncol. 2014;5(3):7492-160S. 3. Kanaji N, Watanabe N, Kita N, et al. Paraneoplastic syndromes associated with lung cancer. World J Clin Oncol. 2014;5(3):7492-160S. 3. Kanaji N, Watanabe N, Kita N, et al. Paraneoplastic syndromes associated with lung cancer. World J Clin Oncol. Lambert Eaton myasthenic syndrome: from clinical characteristics to therapeutic strategies. Lancet Neurol. 2011;15(3):521-530. 5. Titulaer MJ, Lang B, Verschuuren JJ. Lambert-Eaton myasthenic syndrome and small cell lung carcinoma. Immunotargets Ther. 2013;2:31-37. 7. Pelosof LC, Gerber DE. Paraneoplastic syndromes: an approach to diagnosis and treatment. Mayo Clin Proc. 2010;85(9):838-854. 8. Gozzard P, Woodhall M, Chapman C, et al. Paraneoplastic neurologic disorders in small cell lung carcinoma: a prospective study. Neurology. 2015;85:235-239. 9. [Visua AF. Boldingin MI, van Zwet EW, et al. Long-term follow-up, quality of life, and survival of patients with Lambert-Eaton myasthenic syndrome with and without cancer: an analysis of 227 published cases. Clin Neurol Neurosurg. 2002;104(4):395-363. 11. Morrell D, Drapkin B, Shechter G, Grebla R. Lambert-Eaton myasthenic syndrome is underrecognized in small cell lung cancer: an analysis of real-world data. Poster presented at: International Association for the Study of Lung Cancer (IASLC) 2023 World Conference on Lung Cancer. September 9-12, 2023; Singapore. 12. Merino-Ramirez MÅ, Bolton CF. Review of the diagnostic challenges of Lambert-Eaton syndrome revealed through three case reports. Can J Neurol Sci. 2016;43(5):63

SEE PAGE 4 FOR CLINICAL SYMPTOMS, RECOMMENDED TESTING, AND TO REQUEST A FREE SCREENING TEST FOR LEMS



SELECT SYMPTOMS AND RECOMMENDED TESTS

SYNDROME	SYMPTOMS	RECOMMENDED TESTS
LEMS (A,B,C)	Symmetrical body weakness, heaviness in legs or arms, difficulty rising from a chair, dry eyes, dry mouth, constipation ^{5,12}	Associated antibody tests: anti-voltage-gated calcium channel (anti-VGCC) ⁵ Additional testing: electrodiagnostic ⁵
MG (D,E)	Heavy feeling in eyes, drooping eyelids, double vision, difficulty chewing or smiling ¹²⁻¹⁴	Associated antibody tests: anti-acetylcholine receptor (AChR), anti-muscle-specific kinase (MuSK), anti-low-density lipoprotein receptor-related protein 4 (LRP4) ¹⁵
		Additional testing: electrodiagnostic ¹⁵
Sensory neuropathy (F,G)	Numbness, tingling, paresthesia, burning sensation in face or limbs; changes in hearing, smell, touch, taste, or sight ¹⁶	Associated antibody tests: anti-Hu, anti- collapsin-responsive mediator protein 5 (CRMP5) ¹⁶
		Additional testing: skin biopsy, neurophysiologic examination, electromyography (EMG) ¹⁷
Cancer-associated retinopathy (H,I)	Vision changes in one or both eyes, extreme sensitivity to indoor or outdoor light ¹⁸	Associated antibody tests: anti-alpha-enolase (ENO1), anti-recoverin, anti-carbonic anhydrase II (CA2), anti-transducin alpha ¹⁸
		Additional testing: electroretinography (ERG) ¹⁸
Paraneoplastic cerebellar	Unsteadiness or dizziness that leads to nausea or vomiting; double vision; objects	Associated antibody tests: anti-Yo, anti-Tr, anti-metabotropic glutamate receptor 1 (mGluR1) ¹⁹
l egeneration J,K)	appear to jump, blur, or shake during movement ¹⁹	Additional testing: cerebrospinal fluid (CSF) examination, positron emission tomography (PET) scans, lab tests (eg, thyroid function, vitamin levels, human immunodeficiency virus [HIV] serology) ¹⁹
Paraneoplastic encephalomyelitis L,M)	Seizures, changes in personality or short-term memory ²⁰	Associated antibody tests: anti-Hu, anti- collapsin-responsive mediator protein 5 (CRMP5), anti-amphiphysin (AMPH) ²¹
		Additional testing: magnetic resonance imaging (MRI), fluorodeoxyglucose (FDG)-PET scan, computed tomography (CT) scan, electroencephalography (EEG), cancer screening ²¹



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THIS NO-COST TEST CAN HELP CONFIRM A LEMS DIAGNOSIS

If you suspect your SCLC patient may have LEMS, request a **free anti-VGCC antibody test**. If the results are negative, consider referring your patient to a neuromuscular specialist for electrodiagnostic testing.



SCAN THE QR CODE OR CALL 1-833-422-8259 TO REQUEST A FREE ANTI-VGCC ANTIBODY TEST. YOU CAN ALSO VISIT FREELEMSTEST.COM

PATIENT HEALTH ASSESSMENT CHECKLIST

Review the questions below and place a checkmark next to any that apply to you. Your healthcare team will review this checklist with you during your appointment. (If you don't have any of these symptoms, you can leave this form blank.)

A.	Have you noticed recent muscle weakness on both sides of your body or a heaviness in your legs or arms?
В.	Have you recently experienced difficulty getting up from a chair?
C.	Have you recently experienced dry eyes, dry mouth, or constipation?
D.	Have you recently experienced a heavy feeling in your eyes or drooping eyelids?
Ε.	Do you have difficulty chewing or smiling?
	If YES, are these symptoms worse in the evening?
	Have you recently experienced numbness, tingling, a feeling of pins and needles, or burning in your face or limbs?
G.	. Have you noticed a recent change in your senses, such as hearing, smell, touch, taste, or sight?
H	. Have you experienced worsening vision loss in one or both eyes?
l.	Have you started experiencing extreme light sensitivity indoors or outdoors?
J.	Have you recently started experiencing a feeling of unsteadiness or dizziness that leads to nausea or vomiting?
K.	Are you experiencing double vision, or do objects appear to jump, blur, or shake when you move?
L.	Have you had any seizures recently?
M	. Have you experienced a significant change in your personality or short-term memory?