Myositis-Specific Autoantibodies: how specific are they? The Importance of a comprehensive approach in a misleading case

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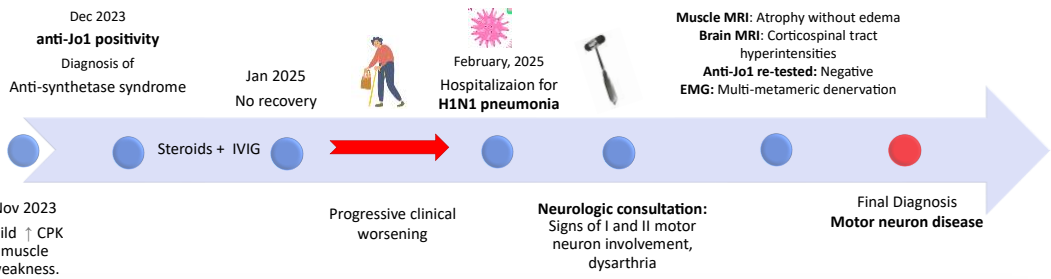
INTRODUCTION

Idiopathic inflammatory myopathies may be diagnosed through clinical presentation and myositis-specific autoantibodies, also in absence of histopathological findings. However, diagnostic accuracy may be compromised in atypical cases.

CLINICAL CASE

A 72-year-old woman was diagnosed with **anti-synthetase syndrome** based on **proximal muscle weakness** in the lower limbs, serological positivity for **anti-Jo1 antibodies** and **mild CPK elevation**. Despite prolonged steroid and Igev therapy, she exhibited muscle weakness worsening, leading in the following months to a complete loss of ambulation. In February 2025 she came to our attention during a neurological consultation in the infectious disease ward, where she was admitted due to H1N1-associated pneumonia. Neurological examination revealed a **severe quadriceps and tibialis anterior weakness**, associated with **mild weakness of the right upper distal limb**. In addiction she had **brisk deep tendon reflexes**, bilateral **Hoffmann's sign**, and a mild **dysarthria**. Muscle MRI of the lower limbs showed signs of atrophy in absence of signs of muscle edema and the electromyography demonstrated a multi-metameric denervation. Brain MRI showed the hyperintensity of the corticospinal tracts. **Repeated anti-Jo1 serum testing was negative**. The patient was discharged with a final diagnosis of motor neuron disease.



CONCLUSIONS

A retrospective application of the **EULAR/ACR criteria** to the initial clinical picture suggests **a lower likelihood of IIM in the absence of antibody positivity (score 7.9 vs 4.1).** This case underscores the necessity of a thorough neurological evaluation in suspected myopathies and highlights the limitations of **serological markers in presence of not full-fledged clinical picture**s. Differentiation between IIM and neurodegenerative conditions is crucial to prevent misdiagnosis and ensure appropriate management.

Variable	Score Points	
	Without muscle biopsy	With muscle biopsy
Age of onset of first symptom assumed to be related to the disease ≥ 18 years and < 40 years	1.3	1.5
Objective symmetric weakness, usually progressive, of the proximal lower extremities	0.8	0.5
Anti-Jo-1 (anti-histidyl-tRNA synthetase) autoantibody present	3.9	3.8
Elevated serum levels of creatine kinase (CK) * *or* lactate dehydrogenase (LDH) * *or* aspartate aminotransferase (ASAT/AST/SGOT) * *or* alanine aminotransferase (ALAT/ALT/SGPT) *	1.3	1.4

References

1. *Lundberg, I.E., Fujimoto, M., Vencovsky, J. et al. Idiopathic inflammatory myopathies. Nat Rev Dis Primers 7, 86 (2021)*
2. *Halilu F, Christopher-Stine L. Myositis-specific Antibodies: Overview and Clinical Utilization. Rheumatol Immunol Res. 2022*
3. *Lundberg, I.E., EULAR/ACR Classification Criteria for Adult and Juvenile Idiopathic Inflammatory Myopathies and their Major Subgroups. Ann Rheum Dis. 2017*