Clinical, morphological and immunological findings in myasthenia-myositis association

Laura Fionda[1], M Garibaldi[1], E Bucci[1], E Vizzaccaro[1], T De Santis[1], F Vanoli[1], A Di Pasquale[1], S Morino[1], EM Pennisi[2], G Antonini[1].

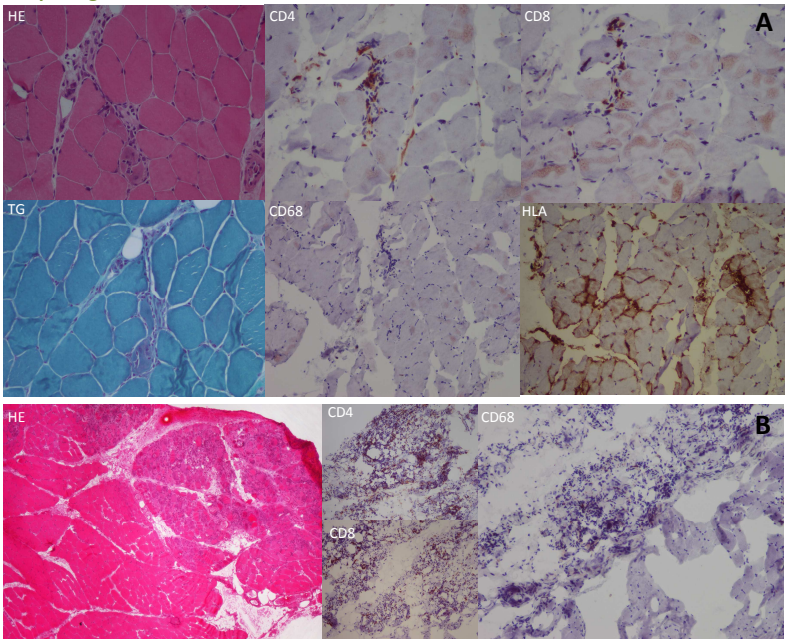
1) Unit of Neuromuscular Diseases, Department of Neurology Mental Health and Sensory Organs (NESMOS), Faculty of Medicine and Psychology, 'Sapienza' University of Rome, Rome, Italy; 2) Neurology Department, Ospedale San Filippo Neri, Rome

Introduction: We present clinical, histological, radiological and immunological features of a cohort of six patients with Myasthenia (MG) and Inflammatory Myopathy (IM). Median age at disease onset was 62 years (range 48-72). All but one patient had a thymic neoplasm. In five patients the diagnosis of both myasthenia and myositis was made since the disease onset. In one more patient IM and thymic tumor were diagnosed 10 years after MG. The clinical discrimination of myasthenic and myopatic symptoms was very difficult, so that in most patients the diagnostic suspicion of an association of MG and IM derived from the detection of high AChR antibodies or CK levels. Muscular weakness was generalized in all patients, with respiratory involvement in four. Ocular symptoms were mild and present in few subjects. Other myasthenia and myositis-associated antibodies were tested. Muscle MRI showed STIR positive images consistent with inflammation in several muscles without muscle replacement. IM was confirmed by muscle biopsy in all patients. Patients with thymoma underwent mediastinal surgery, followed by chemo- and radiotherapy in two of them. All subjects required the association of two or more immunosuppressive treatments to achieve an improvement of neuromuscular symptoms. Two patients died during follow-up because of infectious complication.

Results:

Patient	Sex	Age	Age Onset PM	Age Onset MG	Onset Thymoma	MG type	Muscolar involvement	Thymoma type	CPK value	Anti AchR	Anti MuSK	Anti titina	Anti RyR	Anti LRP4	Anti Jo1	Cardiac	Resp.
1	F	66	65	65	65	IIa	Prox Ul, LL	B2 Not infiltrating	>1500	pos	neg	pos	pos	neg	neg	No	No
2	F	77	73	73	-	IIIa - IIb	Prox Ul, LL bulbar	-	<1000	pos	neg	neg	neg	neg	neg	No	Yes
3	F	51	50	37	50	IIIa	Prox Ul, LL	B3 infiltrating	>1500	pos	neg	pos	pos	neg	neg	No	Yes
4	M	67	64	64	64	IIIa	Prox Ul, LL	B2 infiltrating	1000	pos	neg	ongoing	ongoing	ongoing	neg	No	No
5	M	72	62	62	62	IIIa	Prox Ul, LL	C infiltrating	>1000	pos	neg	n.a.	n.a.	n.a.	neg	No	Yes
6	M	68	60	60	57	IIIa	Prox Ul, LL, axial	B2 infiltrating	<500	pos	neg	n.a.	n.a.	n.a.	neg	No	Yes

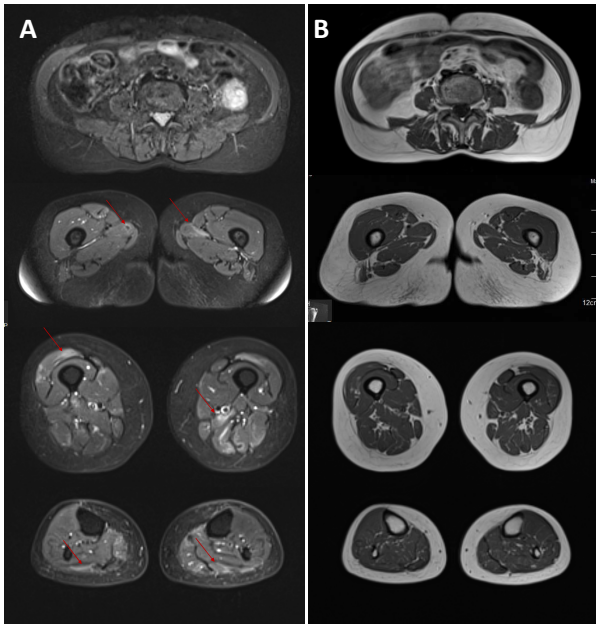
Morphological features



Histological and immunoistochemical stains from P1 (A, deltoid, 65 ys) and P3 (B, deltoid, 50 ys). A: endomisial inflammatory infiltrates caractherized by prevalent lymphocytic cells and less or none macrofagic cells. HLA was expressed only in scattered cells.

B: fascicular necrosis with caracteristic lymphocytic infiltration (CD4, CD8, CD20-not shown) without CD68.

Muscle MRI



STIR (A) and T1-TSE (B) sequences from lower limbs of P1 (65 ys).
STIR hyperintensity of vastus externus and gastrocnemii (right and left), adductor longus, adductor magnus, semimembranosus and biceps femoris long head (left side), trasversus abdomini (right side). None of these muscle showed fatty replacement (B). Interestingly some muscle showed STIR hyperintensity around the intramuscular tendon segments (arrows).

Conclusions: we present six patients presenting both myasthenia and inflammatory myopathy with common clinical, serological and histological findings. Although MG has been repeatedly associated with many autoimmune disorders, reports of patients with concomitant manifestation of MG-myositis are seldom. The high occurrence of thymoma in our patients could represent a particular paraneoplastic phenotype related to thymic neoplasms, and it can conceal a pathophysiologic mechanism correlated to T mediated immunity. There are findings that suggest an higher probability of developing thymoma in patients with MG-myositis association.
Larger cohorts of patients are needed to characterize this clinical association and to better understand its immunological profile.

XLVIII CONGRESSO NAZIONALE
14-17 OTTOBRE 2017 – NAPOLI