MYASTHENIA GRAVIS IN IRAN - THE COURSE OF THE DISEASE FROM COVER TO COVER

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Introduction

Myasthenia Gravis has a special implication in the neuromuscular field as it is a potentially treatable disease among many others. The onset of the disease may be from early infancy to late elderly. Diverse clinical and laboratory characteristics of the disease make the accurate diagnosis and treatment simple but impossible in many instances. Furthermore, while different MG subtypes may impart special prognostic and therapeutic characteristics, the course of the disease specifically its maximal severity and response to treatment cannot be fully predicted in all cases. Altogether, the puzzle of MG is presumably defined by different demographic, clinical, serologic, electrophysiological and genetic properties. Each of these factors may affect disease severity and treatment outcomes alone or in combination. In this study, we studied Iranian MG patients from various diagnostic and therapeutic perspectives. We specifically investigated the relationships between these factors and disease severity and response to treatment over a follow-up period of more than 5 years

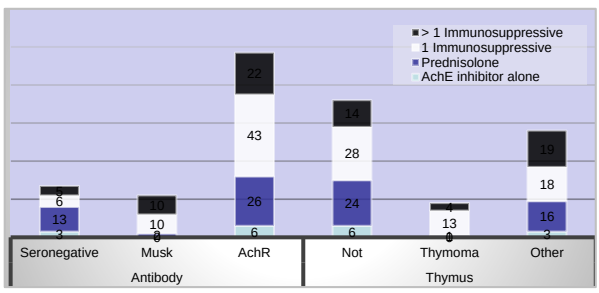
Method

Patients with the diagnosis of MG, referred to the neuromuscular clinic of Shariati Hospital were enrolled. MG diagnosis was considered in clinically indicated cases who had one or more of the following findings: positive anti-AchR antibody, positive Anti-musk antibody, positive 3Hz RNS (>10% decremental response), positive single fiber EMG, significant improvement after a trial of oral AchEi or Edrophonium test. All patients had a chest CT with IV contrast to evaluate the state of thymus. MGFA clinical classification was used to determine maximum disease severity, Class I: Ocular; Class II: Mild generalized; Class III: Moderate generalized; Class IV, V: Severe generalized. MGFA post-intervention status was used as the overall outcome of the therapy as follows: Clinical Stable Remission (CSR), Pharmacologic Remission (PR) and Minimal Manifestation (MM) as 'good' response, Improved (I) as 'intermediate' response and Unchanged (U) or Worse (W) status as 'poor' response. The study was approved by the research committee of Tehran University of Medical Sciences.

Results

In our series of 146 patients, MG was more severe in older, anti-Musk positive, and thymomatous cases (Table 1). Despite differences in the course of the disease and treatment options (Figure 1), the overall outcome was favorable in the majority of patients. Seropositivity to Musk antibody and the presence of thymoma determined the need to immunosuppressive drugs. Nevertheless, these patients did not show further resistance to the conventional immunosuppressive therapies.

		N (%)/Mean (±SD)	Maximum severity (MGFA class)			P- value
			Ocular/Mild	Moderate	Severe	
Sex	Male	58(39.73)	11(19)	12(20.07)	35(60.03)	
	Female	88(60.27)	7(8)	27(30)	54(61.4)	
Age	< 50y	92(63)	12(13)	33(35.9)	47(51.1)	0.016
	>= 50y	54(37)	6(11.1)	6(11.1)	42(77.8)	
Age of onset	Early onset	120(82.2)	16(13.3)	35(29.2)	69(57.5)	
	Late Onset	26(17.8)	2(7.7)	4(15.4)	20(76.9)	
Distribution of symptoms	Generalized	132(90)	4(3)	39(30)	89(67)	<0.001
	Ocular	14(10)	14(100)	0	0	
Duration of disease	5-9 y	84(57.5)	10(11.9)	24(28.6)	50(59.5)	
	10-14 y	33(22.6)	5(15.2)	7(21.2)	21(63.6)	
	>= 15y	27(19.9)	3 (10.3)	(26.7)8	(62.1)16	
Thymus Pathology	Thymoma	18(12.33)	0(0)	1(5.6)	17(94.4)	<0.001
	Other	56(38.35)	2(3.6)	15(26.8)	39(69.6)	
	Not thymectomized	72(49.32)	16(22.2)	23(31.9)	33(45.8)	
Antibody status	Anti AchR	97(66.43)	6(6.2)	27(27.8)	64(66)	<0.001
	Anti-Musk	22(15.07)	0(0)	5(22.7)	17(77.3)	
	Seronegative	27(18.5)	12(44.4)	7(25.9)	8(29.6)	
Post intervention status	Good	121(82.88)	15(12.40)	35(28.9)	71(58.7)	
	Intermediate	16(10.96)	1(6.3)	3(18.8)	12(75)	
	Poor	9(6.16)	2(22.2)	1(11.1)	6(66.7)	



			Immunosuppressive		P-value	OR ($CI_{95\%}$)	Number of Immunosuppressive		P-value	OR ($CI_{95\%}$)
			Yes	No			1	>1		
Age		45 (± 15)	45.46(± 14.57)	43.74 (± 16.06)	0.259	0.98(0.96-1.01)	45.05(±15.28)	44.33(±14.6)	0.656	1.01(0.97-1.04)
Age of onset	Early-onset	120	78(65)	42(35)	Ref	1	89(74.2)	31(25.8)	Ref	1
	Late-onset	26	18(69.2)	8(30.8)	0.155	2.3(0.73-7.6)	21(80.8)	5(19.2)	0.7	0.8(0.27-2.4)
Antibody status	Seronegative	27	11(40.7)	16(59.3)	Ref	1	20(74.1)	7(25.9)	Ref	1
	AchR	97	65(67)	32(33)	0.146	1.7(0.83-3.5)	74(76.3)	23(23.7)	0.396	0.7(0.32-1.6)
	Musk	22	20(90.9)	2(9.1)	<0.001	13.9(4.2-45.2)	16(72.7)	6(27.3)	0.822	0.9(0.37-2.2)
Thymus	Not thymectomized	72	42(58.3)	30(41.7)	Ref	1	55(76.4)	17(26.6)	Ref	1
	Thymoma	18	17(94.4)	1(5.6)	<0.001	15.8(3.4-74.4)	12(66.7)	6(33.6)	0.416	1.5(0.58-3.7)
	Other	56	37(66.1)	19(33.9)	0.557	1.2(0.63-2.3)	43(76.8)	13(23.2)	0.923	1.04(0.57-2.1)

Conclusions

We tried to depict a holistic picture of MG in 146 patients over a long course of the disease (6 -37 years). Our data not only include diagnostic evaluations but also disease severity, treatment choices, clinical course and response to treatment in Iranian MG patients. In our series, maximum disease severity was significantly related to age, antibody status and thymus pathology. Despite the differences in the disease course and severity, the overall outcome was favorable in the majority of patients with MG. In contrary to the previous reports anti-Musk positive patients in our series did not need a more vigorous treatment comparing anti-acetylcholine receptor positive or seronegative patients.

References

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