Clinical Manifestations of Acetylcholine Receptor Antibody Positive and Negative Myasthenia Gravis

Nath Pasutharnchat MD*,
Supaporn Wacharapluesadee PhD**, Thiravat Hemachudha MD*,**

** Division of Neurology, Department of Medicine, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand*
*** Neuroscience Center for Research and Development & WHO Collaborating Centre for Research and Training on Viral Zoonoses, Faculty of Medicine, Chulalongkorn University and King Chulalongkorn Memorial Hospital, Thai Red Cross Society, Bangkok, Thailand*

Background: *Acquired myasthenia gravis (MG) is the most common neuromuscular junction disorder. Acetylcholine receptor (AChR) antibody is found in the majority of MG.*
Objective: *Describe and compare the clinical manifestations of MG patients with and without the presence of serum AChR antibody.*
Material and Method: *Between 2009 and 2010, 90 cases with MG, treated at the adult neurology service of King Chulalongkorn Memorial Hospital were consecutively recruited. Serum AChR antibody was measured by enzyme linked immunosorbent assay. Result of 0.45 nmole per liter or over is considered positive. Patients were divided into two groups based on serological status. Demographic data and clinical parameters were recorded and compared.*
Results: *Mean age was 47.5 $\pm$ 15.6 years. Sixty-eight (75.5%) were female. Twenty-two (24.4%) had ocular MG and sixty-eight (75.6%) had generalized MG. Mean age of onset was 40.9 $\pm$ 15.2 years. Sixty-seven (74.4%) were AChR antibody positive and twenty-three (25.6%) were AChR antibody negative. Limb/ocular-limb weakness was more commonly found in AChR antibody positive ($p = 0.12$) while pure ocular weakness was significantly found in AChR antibody negative ($p = 0.006$*). Myasthenic crisis (MC) tended to develop in AChR antibody positive ($p = 0.06$). Numbers of patients with moderate to severe weakness were significantly higher in AChR antibody positive ($p = 0.04$*). Thymic pathology was found in 72.3% of thymectomized AChR antibody positive patients. None of thymectomized seronegative patients had abnormal thymus. Good response to acetylcholine esterase inhibitors was more frequent in AChR antibody positive patients ($p = 0.009$*). Immunotherapy and thymectomy ($p = 0.001$*) were more frequently provided in AChR antibody positive patients.*
Conclusion: *AChR antibody positive MG manifested more severe, generalized weakness with frequent MC. Abnormal thymic histopathology was more frequently found in AChR antibody positive MG. Response to ACEI was better in AChR antibody positive group. However, overall outcomes of both groups were favorable without any difference.*

Keywords: *Myasthenia gravis, Acetylcholine receptor antibody, Clinical manifestation*

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Acquired myasthenia gravis (MG) is the most common neuromuscular junction disorder. Two clinical patterns, ocular myasthenia gravis (OMG) and generalized myasthenia gravis (GMG), are generally classified in clinical practice. Acetylcholine receptors (AChR) antibodies, the most important serological marker in MG, are found in about 73 to 90% of GMG and about 50% of OMG[1,2]. They have been widely measured by radioimmunoassay method. Recently, a new enzyme linked immunosorbent assay (ELISA) for AChR antibodies has been introduced. This method has been shown to be as sensitive and specific as radioimmunoassay method[3]. AChR antibody testing had not been available in Thailand until lately, thus the clinico-immunological correlation of myasthenia gravis was not much investigated in Thailand. The present study aimed to describe and compare the clinical manifestations of the patients with and without the presence of serum AChR antibody measured by ELISA competitive sandwich assay.

Correspondence to:
Pasutharnchat N, Division of Neurology, Department of Medicine, Faculty of Medicine, Chulalongkorn University, Bangkok 10330, Thailand.
Phone: 0-2256-4612
E-mail: nathpasu@hotmail.com

Material and Method

Between 2009 and 2010, 90 cases of acquired myasthenia gravis patients with previously unknown serology, being treated at the adult neurology clinic of the King Chulalongkorn Memorial Hospital for at least one year were consecutively recruited. Diagnosis of myasthenia gravis was based on typical history and muscle fatigability on examination plus 1) classical electrodiagnostic findings (either by repetitive nerve stimulation (RNS) or single fiber electromyography (SFEMG)) or 2) unequivocal positive response to acetylcholinesterase inhibitors (ACEI). Three hertz RNS was obtained at three nerve muscle pairs; facial nerve-orbicularis oculi muscle, accessory nerve-upper trapezius muscle and ulnar nerve-abductor digiti minimi muscle, using standard techniques. Reproducible decrement of more than 10% from the first to the fourth compound muscle action potential amplitudes either at rest or after post 60-second isometric exercise of any nerve muscle pairs was considered a positive result. Suspected cases with normal RNS findings were measured for abnormal jitters at the orbicularis oculi, using stimulus SFEMG with concentric needle recording technique and the reference values described by Ertas[4]. All electrodiagnostic tests were carried out by MedelecSynergy EMG and EP system version 11.

Patients were classified into different stages at the time of presentation, based on the Task Force of the Medical Advisory Board of the Myasthenia Gravis Foundation of America classification[5]. Serum AChR antibody was measured by ELISA technique (AChR antibody ELISA kit, RSR limited, UK). All specimens were tested at Neuroscience Center for Research and Development at Faculty of Medicine, Chulalongkorn University. Result of 0.45 nmole per liter or over is considered positive. Patients were divided into two groups; AChR antibody positive and AChR antibody negative. Clinical parameters of both groups, including demographic data, duration of illness, patterns of weakness, presence and frequency of myasthenic crisis (MC), electrodiagnostic findings, associated disorders, thymic histopathologies, responsiveness to ACEI, treatment received and treatment outcome were recorded and analyzed. Since the positive response to ACEI was set as one of an eligible diagnostic criteria, to eliminate this interference, patients in which their diagnosis of MG required an unequivocal positive response to ACEI, were excluded from the analysis of "good response to ACEI".

Categorical variables were presented in number (%) and compared using Chi square test or Fisher's exact test if expected value in any cell was less than 5. Results were presented as p value and odd ratio (95% CI). Continuous variables were presented in mean $\pm$ SD and median and inter quartile range (IQR) and compared using unpaired t-test. Result was presented as p-value and standard error of difference. Significance was set at $p < 0.05$.

The present study was approved by the Institutional Review Board of the Faculty of Medicine, Chulalongkorn University (IRB No.467/51). Each patient had electrodiagnostic tests and had blood sampled for immunological study with verbal and informed consent.

Results

Among 90 cases, age ranged from 17-78 years old (mean 47.5 ± 15.6). Sixty-eight cases (75.6%) were female. Twenty-two (24.4%) had OMG and sixty-eight (75.6%) had GMG. Ages of onset ranged from 14 to 75 years old (mean 40.9 ± 15.2). The peak age of onset in females was in fifth decade, whereas in males it was in the seventh decade. Duration of illness ranged from 1 to 33 years (median 4, IQR 1, 10). All patients had typical history and physical signs of MG. Eighty-one cases (90%) had both positive electrodiagnostic tests and positive response to ACEI. Eight cases (8.9%) had positive electrodiagnostic tests alone and one case (1.1%) had positive response to ACEI alone. Regarding to electrodiagnostic tests, RNS was positive in 82.2% (59.1% in OMG and 89.7% in GMG). Sixteen cases with negative RNS test were OMG or mild form of GMG (MGFA stage II), of which fifteen cases had abnormal increased jitters at the orbicularis oculi. Thus, overall rate of positive electrodiagnostic tests was 89/90 (98.9%). Number and percentage of positive RNS test and positive AChR antibody in different MG staging are summarized in Table 1.

Sixty-seven cases (74.4%) were AChR antibody positive and twenty-three cases (25.6%) were AChR antibody negative. Clinical parameters between two groups were statistically compared and shown in Table 2. Mean age of onset in AChR antibody positive and negative groups were 40.3 ± 15.6 and 42.3 ± 14.0 years respectively, of which there was no statistical difference ($p = 0.63$, standard error of difference = 4.14). "Good response to ACEI" was compared amongst 89 cases, in which diagnosis of MG was not based on unequivocal positive response to ACEI. Sixty-five (97%) of 67 seropositive patients had a very good response to pyridostigmine, an ACEI. Two cases had partial response. None

Table 1. Number and percentage of positive RNS test and positive AChR antibody in different MG staging (n = 90)

MG classification at presentation	Number	Positive RNS	AChR antibody positive
OMG	22	13 (59.1%)	11 (50.0%)
I	22	13	11
GMG	68	61 (89.7%)	56 (82.4%)
IIa	18	13	13
IIb	8	6	7
IIIa	21	21	18
IIIb	10	10	8
IVa	3	3	3
IVb	0	-	-
V	8	8	7

OMG = ocular myasthenia gravis; GMG = generalized myasthenia gravis; RNS = repetitive nerve simulation; AChR = acetylcholine receptor

Table 2. Comparison of sex clinical parameter between AChR antibody positive and AChR antibody negative MG

	AChR antibody positive (n = 67)	AChR antibody negative (n = 23)	p-value	OR (95% CI)
Female (n (%))	51 (76.1)	17 (73.9)	0.94	1.13 (0.33-3.74)
Weakness pattern[+]				
Pure ocular (n (%))	11 (16.4)	11 (47.8)	0.006*	0.21 (0.07-0.68)
Limb or limb-ocular (n (%))	32 (47.8)	6 (26.1)	0.12	2.59 (0.82-8.46)
Ocular-bulbar (n (%))	10 (14.9)	2 (8.7)	0.72	1.84 (0.33-13.31)
Limb-bulbar (n (%))	10 (14.9)	2 (8.7)	0.72	1.84 (0.33-13.31)
Bulbar-respiratory (n (%))	4 (6.0)	2 (8.7)	0.64	0.67 (0.09-5.70)
MG with moderate and severe weakness (n (%))	36 (53.7)	6 (26.1)	0.04*	3.29 (1.05-10.76)
MC at presentation (n (%))	7 (10.4)	1 (4.3)	0.67	2.57 (0.29-58.68)
MC at any time of illness (n (%))	21 (31.3)	2 (8.7)	0.06	4.79 (0.95-32.58)
Immunomodulation (n (%))	67 (100)	16 (69.6)	NA	
Thymectomy (n (%))	47 (70.1)	7 (30.4)	0.001*	5.37 (1.73-17.23)
Favorable response[++] (n (%))	60 (89.6)	21 (91.3)	1.00	0.82 (0.11-4.85)
Pharmacoligic remission (n (%))	19 (28.3)	8 (34.8)	0.75	0.74 (0.24-2.29)

***** Statistically significant

[+] Distribution of involving muscles. In some cases, when the pattern was not totally fitted, prominent involving muscles were applied

[++] Favorable response includes pharmacologic remission, minimal manifestation and improvement (5), with no regard to number or dose of immunosuppressive medication; and also excluding patients receiving intravenous immunoglobulin and plasma exchange treatment at a regular basis

MC = myasthenic crisis; NA = non applicable

developed adverse effects. Seventeen (77.3%) of 22 seronegative patients had good response to pyridostigmine and 5 (22.7%) were unresponsive and also developed hypercholinergic effects (muscle twitching, diarrhea and hypersecretion) at 60-180 mg of pyridostimine. All cases suffering from hypercholinergic effects had prominent bulbar and bulbar-respiratory weakness. Good response to ACEI was significantly found in AChR antibody positive patients (p = 0.009, OR 9.56).

In AChR antibody positive patients, 11 (16.4%) had OMG and 56 (83.6%) had GMG. Median duration of illness was 3.5 years (IQR 1, 9). MC developed in 21 cases, of which the majority (15/21) had crisis during the first two years of onset. Thirteen cases had one episode of MC; however, the frequency

of crisis had been up to six times in two cases. Seven cases initially presented with MC. Fifteen cases had at least one of the following associated disorders; thyroid diseases, rheumatoid arthritis, systemic lupus erythrematosus and other autoimmune diseases. Thymectomy was done in 47 cases. Pathological findings were available for 41 cases, which revealed follicular hyperplasia in 25, thymoma in nine and normal thymic tissue in seven. All cases received at least one kind of long term immunomodulatory medications; corticosteroid, azathioprine, mycophenolate mofetil, methotrexate, cyclophosphamide or cyclosporine. Three cases required chronic intermittent intravenous immunoglobulin or plasma exchanges at the interval of two to four months. Favorable responses were observed in 60 cases (89.6%), among these, 19 were in pharmacological remission. Among seven cases with poor responses, three cases had thymoma, three cases were no response or developed adverse effects to several medications and one case had long-standing MG complicated by several medical problems.

In AChR antibody negative patients, 11 (47.8%) had OMG and 12 (52.2%) had GMG. Median duration of illness was 5.5 years (IQR 2.5, 11 years). Two cases had hyperthyroidism. Seven cases (all were GMG) underwent thymectomy. The results showed five normal thymic tissues. There were two unavailable data. Seven cases of OMG did not receive immunomodulatory treatment, and 16 cases required at least one of those. Twenty-one (91.3%) had favorable response, eight were in pharmacological remission. One case with unfavorable response was complicated by medical problems and subsequently expired. Another had no improvement after three kinds of immunosuppressive drugs were given.

Discussion

To the best of the authors' knowledge, this is the first report comparing the clinical manifestations of two subgroups of MG based on AChR antibody status using ELISA technique, in Thailand. In the presented study, all patients were recruited from an adult neurology service at a university referral center, thus a number of moderate to severe MG and MC at presentation were relatively high, with the overall rate of MC of 25.5%. In 2005, Lacomis reported that about 8 to 27% of patients with MG experienced myasthenic crisis[6]. Regarding to sex, peak ages of onset in males (seventh decade) were similar to the well-known pattern with male predominant elderly onset. However, the peak in females (fifth decade) were higher than previously described (< 30 years old). Recently, some studies reported a changing pattern of incidence in MG with increased incidence of late onset and decreased incidences of early onset MG[7,8]. Aging in population, improvement of diagnostic test and increased awareness of disease in elderly may contribute to this change.

The frequency of AChR antibody positivity varied among studies with wide ranges from 66-93% in non-Asian population[9]. Several factors may affect this variation. One recent study from Thailand focusing on sensitivity of electrodiagnostic tests and AChR antibody showed the positive rate of AChR antibody titer of 38% and 73% in OMG and GMG respectively with overall rate of 60%[10]. Another recent study from India using ELISA technique showed overall AChR antibody positivity of 60%[11]. The overall positive rate of AChR antibody in the present study was 74.4%. The higher percentage of serological positivity compared to two previous reports may be from the higher numbers of GMG with greater severity in the present study.

Based on the immunological status, MG has been categorized into different subgroups. AChR antibody is the first antibody detected in majority of MG patients. It was first reported by Lindstrom et al in 1976[12]. Patients without AChR antibody had been initially referred to seronegative MG. It has been generally noted that there is not much difference of clinical patterns between these two groups and management is quite similar. Unexpectedly, fully published reports supporting these views were not so many[13]. Soliven et al found no significant difference of sex, duration of symptoms and associated auto-immune diseases, except significant presences of abnormal electrodiagnostic test in AChR antibody positive group[14]. In one large cohort of MG without thymoma, Sander et al reported that both groups had quite similar clinical pattern but seronegative patients, particularly males, tended to have milder weakness[9]. Bindu et al noted that AChR antibody positive MG had older age of onset and more frequent MC[11]. Suhail et al reported that AChR antibody positive patients had older age of onset (> 40 years) and bulbar weakness[15]. In the present study, the authors found that AChR antibody positive MG were more severe ($p = 0.04$). MC and limb/ocular-limb pattern was also higher in AChR antibody positive group, but there was no statistical significance. Pure ocular pattern was significantly higher in AChR antibody negative MG ($p = 0.006$). The age of onset in the present study was

not different. Thus, regarding to these parameters, the presented findings were quite comparable with previous studies.

During the past decades, anti-muscle specific kinase (antiMUSK) antibodies have been found in 0-49% in previously called seronegative MG[13]. Three weakness patterns, oculobulbar, neck-respiratory and generalized forms, were described in antiMUSK MG. However, prominent bulbar weakness was significantly higher when compared to AChR antibody positive MG and double seronegative (antiMUSK negative and AChR antibody negative) MG[16]. In addition, Leite et al also observed lesser changes of thymic histology compared to AChR antibody MG[14]. Another interesting finding in antiMUSK MG was the frequent reports of unresponsiveness to or hyper-cholinergic effects of ACEIs[13], making this a possible additional clinical clue for diagnosis. Recently, Leite et al detected AChR antibody binding to rapsyn-clustered AChR in 66% MG sera that were not binding to AChR in solutions, calling it, a low affinity AChR antibody[18]. These patients had clinical features as well as thymic pathology resembling AChR antibody MG, but milder clinical severity and better response to treatment. Thus, this may represent a spectrum of AChR antibody MG, at its mild end.

It is not surprising that most common weakness pattern in the presented AChR antibody negative group was pure ocular. In the presented series, all pure ocular AChR antibody negative patients had good response to ACEI. However, overall good response rate to ACEI was significantly lower in this group ($p = 0.009$). Interestingly, all five patients, who did not response and developed hypercholinergic effects to ACEI, had prominent bulbar or bulbar respiratory weakness. Whether they were antiMUSK MG needed to be further investigated.

All patients with AChR antibody positive patients required at least one kind of immunotherapy while 16 (69.6%) of AChR antibody negative patients required at least one of those. The number of patients who underwent thymectomy was also significantly higher in AChR antibody positive group ($p = 0.001$). Those therapeutic approaches were provided during the period of unknown serologic status. In clinical practice, immunosuppressive drugs were usually prescribed in GMG and treating physicians tended to perform thymectomy in more severe cases. Thus, the higher numbers of patients receiving these treatments may reflect more clinical severity of AChR antibody positive group. Thymus is abnormal in most MG patients. Approximately 70% has follicular hyperplasia and over 10% has thymoma[19]. In the present study, thymic histopathology was available in 41 cases of total 47 thymectomized AChR antibody positive groups. Follicular hyperplasia and thymoma was found in 60.9% and 21.9% of thymectomized AChR antibody positive patients respectively. Overall rate of thymoma in the present study was 10%. Thus, the presented findings may confirm the previous results.

Because several kinds of immunosuppressive medication were introduced, prognosis of MG during the recent decades has been improved. With regard to treatment response, the presented study showed quite high percentage of favorable outcome in both groups. There was no significant difference in favorable response, pharmacological remission or poor response between two groups. There were some limitations of the present study. Firstly, all serum assays were tested after patients had received treatments. Immunotherapy and thymectomy before assay reduce the frequency of seropositivity, however, some authors experienced persistent seropositivity in clinical remission stage[9]. If that was the case, the number of AChR antibody positivity in the present study may be less than that it should be. Secondly, authors recruited patients being treated at the clinic for at least one year. Patients who lost to follow up prior to the present study time due to any reasons, such as migration, spontaneously recovered, worsening of symptoms and death or even patients who were in complete stable remission were also not included. Thus, this population may not represent the whole image of MG patients in this university-based referral center. In addition, one-year treatment may be too short for evaluation of a response, especially for thymectomy. Treatment outcome presented in the present study may then not reflect the actual outcome in total MG population.

The present study shows the results from a university-based referral center. More studies in other MG populations, such as in the community hospitals or in the ophthalmological clinics, are necessary to help representing the whole picture of MG patients in Thailand. Furthermore, the clinico-immunological study focusing on the AChR antibody negative MG, which has never been reported in Thailand, would also be beneficial to help to clearly understand the pathophysiology of this disorder.

Conclusion

The authors reported a clinico-immonological correlation between two groups of MG regarding to

the presence of AChR antibody. AChR antibody positive MG manifested more severe, generalized weakness with frequent MC. Abnormal thymic histopathology was more frequently found in the AChR antibody positive MG. Response to ACEI was better in AChR antibody positive group. However, overall outcomes of both groups were favorable without any difference.

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Potential conflicts of interest

None.

References

1. Vincent A. Antibody-mediated disorders of neuromuscular transmission. Suppl Clin Neurophysiol 2004; 57: 147-58.
2. Jitpimolmard S, Taimkao S, Chotmongkol V, Sawanyawisuth K, Vincent A, Newsom-Davis J. Acetylcholine receptor antibody in Thai generalized myasthenia gravis patients. J Med Assoc Thai 2006; 89: 68-71.
3. Hewer R, Matthews I, Chen S, McGrath V, Evans M, Roberts E, et al. A sensitive non-isotopic assay for acetylcholine receptor autoantibodies. Clin Chim Acta 2006; 364: 159-66.
4. Ertas M, Baslo MB, Yildiz N, Yazici J, Oge AE. Concentric needle electrode for neuromuscular jitter analysis. Muscle Nerve 2000; 23: 715-9.
5. Jaretzki A, III, Barohn RJ, Ernstoff RM, Kaminski HJ, Keesey JC, Penn AS, et al. Myasthenia gravis: recommendations for clinical research standards. Task Force of the Medical Scientific Advisory Board of the Myasthenia Gravis Foundation of America. Neurology 2000; 55: 16-23.
6. Lacomis D. Myasthenic crisis. Neurocrit Care 2005; 3: 189-94.
7. Matsui N, Nakane S, Nakagawa Y, Kondo K, Mitsui T, Matsumoto T, et al. Increasing incidence of elderly onset patients with myasthenia gravis in a local area of Japan. J Neurol Neurosurg Psychiatry 2009; 80: 1168-71.
8. Casetta I, Groppo E, De Gennaro R, Cesnik E, Piccolo L, Volpato S, et al. Myasthenia gravis: a changing pattern of incidence. J Neurol 2010; 257: 2015-9.
9. Sanders DB, Andrews PI, Howard JF, Massey JM. Seronegative myasthenia gravis. Neurology 1997; 48 (Suppl 5): 40S-45S.
10. Witoonpanich R, Dejthevaporn C, Sriphrapradang A, Pulkes T. Electrophysiological and immunological study in myasthenia gravis: diagnostic sensitivity and correlation. Clin Neurophysiol 2011; 122: 1873-7.
11. Bindu PS, Nirmala M, Patil SA, Taly AB. Myasthenia gravis and acetylcholine receptor antibodies: a clinico immunological correlative study on South Indian patients. Ann Indian Acad Neurol 2008; 11: 242-4.
12. Lindstrom JM, Seybold ME, Lennon VA, Whittingham S, Duane DD. Antibody to acetylcholine receptor in myasthenia gravis. Prevalence, clinical correlates, and diagnostic value. Neurology 1976; 26: 1054-9.
13. Oh SJ. Muscle-specific receptor tyrosine kinase antibody positive myasthenia gravis current status. J Clin Neurol 2009; 5: 53-64.
14. Soliven BC, Lange DJ, Penn AS, Younger D, Jaretzki A 3rd, Lovelace RE, et al. Seronegative myasthenia gravis. Neurology 1988; 38: 514-7.
15. Suhail H, Subbiah V, Singh S, Behari M. Serological and clinical features of patients with myasthenia gravis in north Indian population. Int J Neurosci 2010; 120: 115-9.
16. Deymeer F, Gungor-Tuncer O, Yilmaz V, Parman Y, Serdaroglu P, Ozdemir C, et al. Clinical comparison of anti-MuSK- vs anti-AChR-positive and seronegative myasthenia gravis. Neurology 2007; 68: 609-11.
17. Leite MI, Strobel P, Jones M, Micklem K, Moritz R, Gold R, et al. Fewer thymic changes in MuSK antibody-positive than in MuSK antibody-negative MG. Ann Neurol 2005; 57: 444-8.
18. Leite MI, Jacob S, Viegas S, Cossins J, Clover L, Morgan BP, et al. IgG1 antibodies to acetylcholine receptors in 'seronegative' myasthenia gravis. Brain 2008; 131: 1940-52.
19. Sanders DB, Howard JF Jr. Disorders of neuromuscular transmission. In: Bradley WG, Daroff RB, Fenichel GM, Jankovic J, editors. Neurology in clinical practice. 5th ed. Philadelphia: Elsevier; 2008: 2383-402.

อาการแสดงทางคลินิกของผู้ป่วยโรคกล้ามเนื้ออ่อนแรงไมแอสทีเนียที่มี และไม่มีแอนติบอดีต่อตัวรับอะเซทิลโคลีน

ณัฐ พสุธารชาติ, สุภาภรณ์ วัชรพฤษาดี, ธีระวัฒน์ เหมะจุฑา

***ภูมิหลัง**: โรคกล้ามเนื้ออ่อนแรงไมแอสทีเนีย เป็นโรคของรอยต่อประสาทและกล้ามเนื้อที่พบได้บ่อยที่สุด แอนติบอดีต่อตัวรับอะเซทิลโคลีน พบได้ในผู้ป่วยโรคกล้ามเนื้ออ่อนแรงไมแอสทีเนียส่วนใหญ่*

***วัตถุประสงค์**: เพื่อบรรยายและเปรียบเทียบอาการทางคลินิกของผู้ป่วยโรคกล้ามเนื้ออ่อนแรงไมแอสทีเนียที่มีและที่ไม่มีแอนติบอดีต่อตัวรับอะเซทิลโคลีน*

***วัสดุและวิธีการ**: ผู้นิพนธ์ตรวจระดับแอนติบอดีต่อตัวรับอะเซทิลโคลีนด้วยวิธีอิไลซ่าในผู้ป่วยโรคกล้ามเนื้ออ่อนแรงไมแอสทีเนีย ที่ได้รับการรักษาที่คลินิกอายุรกรรมประสาทของโรงพยาบาลจุฬาลงกรณ์ระหว่างปี พ.ศ. 2552-2553 จำนวน 90 ราย ผลตรวจมากกว่าหรือเท่ากับ 0.45 นาโนโมลต่อลิตรเป็นผลบวก ผู้นิพนธ์แบ่งผู้ป่วยเป็นสองกลุ่มตามผลแอนติบอดี ผู้นิพนธ์บันทึกและวิเคราะห์เปรียบเทียบข้อมูลทางระบาดวิทยาและอาการทางคลินิก*

***ผลการศึกษา**: อายุเฉลี่ยของผู้ป่วยเท่ากับ 47.5 $\pm$ 15.6 ปี เป็นเพศหญิง 68 คน (75.5%) 22 ราย (24.4%) เป็นโรคกล้ามเนื้ออ่อนแรงไมแอสทีเนียเฉพาะที่กล้ามเนื้อตา 68 ราย (75.6%) เป็นโรคกล้ามเนื้ออ่อนแรงไมแอสทีเนียชนิดทั่วตัว อายุที่เริ่มเป็นเฉลี่ยเท่ากับ 40.9$\pm$15.2 ปี 67 ราย (74.4%) มีแอนติบอดีต่อตัวรับอะเซทิลโคลีน และ 23 ราย (25.6%) ไม่พบแอนติบอดีต่อตัวรับอะเซทิลโคลีน อาการอ่อนแรงของกล้ามเนื้อแขนขาและกล้ามเนื้อตาพบได้บ่อยกว่าในผู้ป่วยที่มีแอนติบอดีต่อตัวรับอะเซทิลโคลีน ($p = 0.12$) ส่วนอาการอ่อนแรงเฉพาะกล้ามเนื้อตาพบมากอย่างมีนัยสำคัญทางสถิติในผู้ป่วยที่ไม่มีแอนติบอดีต่อตัวรับอะเซทิลโคลีน ($p = 0.006$*) อาการอ่อนแรงของกล้ามเนื้อหายใจแบบวิกฤตมักเกิดในผู้ป่วยที่มีแอนติบอดีต่อตัวรับอะเซทิลโคลีน ($p = 0.06$) จำนวนผู้ป่วยที่มีอาการอ่อนแรงปานกลางและรุนแรงพบได้มากอย่างมีนัยสำคัญทางสถิติในผู้ป่วยที่มีแอนติบอดีต่อตัวรับอะเซทิลโคลีน ($p = 0.04$*) พยาธิสภาพของต่อมไทมัสพบใน 72.3% ของผู้ป่วยที่มีแอนติบอดีต่อตัวรับอะเซทิลโคลีน และได้รับการผ่าตัดต่อมไทมัส ในขณะที่ไม่พบความผิดปรกติดังกล่าวในผู้ป่วยที่ไม่มีแอนติบอดีต่อตัวรับอะเซทิลโคลีนและได้รับการผ่าตัดเลย การตอบสนองดีต่อยาต้านเอนไซม์อะเซทิลโคลีนเอสเทอเรส พบมากกว่าในผู้ป่วยที่มีแอนติบอดีต่อตัวรับอะเซทิลโคลีน ($p = 0.009$*) ผู้ป่วยที่มีแอนติบอดีต่อตัวรับอะเซทิลโคลีนได้รับการรักษาด้วยยาปรับภูมิคุ้มกัน และได้รับการผ่าตัดต่อมไทมัส ($p = 0.001$*) บ่อย*

***สรุป**: ผู้ป่วยโรคกล้ามเนื้ออ่อนแรงไมแอสทีเนียที่มีแอนติบอดีต่อตัวรับอะเซทิลโคลีน มีอาการอ่อนแรงแบบทั่วตัวบ่อยกว่า มีความรุนแรงของโรคมากกว่า และเกิดอาการอ่อนแรงของกล้ามเนื้อหายใจแบบวิกฤตได้บ่อยกว่าผู้ป่วยที่ไม่มีแอนติบอดีต่อตัวรับอะเซทิลโคลีน พยาธิสภาพของต่อมไทมัสพบได้บ่อยกว่าในผู้ป่วยที่มีแอนติบอดีต่อตัวรับอะเซทิลโคลีน การตอบสนองดีต่อยาต้านเอนไซม์อะเซทิลโคลีนเอสเทอเรส พบได้มากกว่าในผู้ป่วยที่มีแอนติบอดีต่อตัวรับอะเซทิลโคลีน อย่างไรก็ตามผลการรักษาโดยรวมได้ผลดีในผู้ป่วยทั้งสองกลุ่มโดยไม่มีความแตกต่างกัน*