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SOME CLINICAL CHARACTERISTICS AND DEPRESSIVE DISORDERS IN MYASTHENIA GRAVIS PATIENTS AT MILITARY HOSPITAL 103

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ABSTRACT

Objective: To investigate the clinical characteristics and depressive disorders in patients with myasthenia gravis.

Subjects and Methods: A cross-sectional descriptive study was conducted on 83 myasthenia gravis patients treated at the 103 Military Hospital from July 2024 to March 2025.

Results: Most patients had an education level ranging from primary to secondary school (61.45%), and manual laborers accounted for a high proportion (57.83%). The mean age of disease onset was 45.2 years, with later onset in males compared to females. The average disease duration was 8.2 years, with 69.88% having the disease for over 4 years. The prevalence of depressive disorders was 45.78%, predominantly moderate in severity (68.42%). There was no significant association between depression and education level, occupation, or age of onset ($p > 0.05$). Depression severity increased with disease duration, with the highest prevalence in patients with disease duration over 4 years ($p < 0.05$).

Conclusion: Depressive disorders are common in patients with myasthenia gravis, with a positive correlation between disease duration and depression severity. Occupation, education level, and age of onset showed no clear impact on depression.

Keywords: Myasthenia gravis, depressive disorder, 103 Military Hospital.

1. INTRODUCTION

Myasthenia gravis is a chronic neuromuscular disorder characterized by muscle weakness resulting from impaired neuromuscular transmission, primarily due to antibodies targeting acetylcholine receptors at the neuromuscular junction. The disease typically manifests in adults, with approximately 50% of patients presenting with ocular muscle weakness, significantly affecting quality of life.[1]

Myasthenia gravis may also lead to various psychiatric complications, particularly depressive disorders. Several international studies have reported the prevalence of depression in myasthenia gravis patients ranging from 20% to nearly 50%, depending on study context and assessment tools [1]. According to Nadali et al. (2023), the average prevalence of depression in these patients is 36%, while anxiety reaches 33%, highlighting a significant concern in patient care [2]. Notably, Kulaksizoglu (2007) emphasized that mood disorders such as depression and anxiety are not merely psychological consequences but may be associated with pathophysiological mechanisms, treatment factors (e.g., prolonged corticosteroid use), and the chronic nature of the disease [3].

In Vietnam, research on depressive disorders in patients with myasthenia gravis remains limited, both in terms of prevalence and associated factors. A thorough understanding of clinical characteristics, prevalence, and risk factors is essential for early screening, timely intervention, and comprehensive patient care. Therefore, this

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study was conducted to investigate the clinical features and depressive disorders in myasthenia gravis patients at the 103 Military Hospital.

2. SUBJECTS AND METHODS

2.1. Study Design: This was a cross-sectional descriptive study conducted at the Department of Neurology, 103 Military Hospital.

2.2. Study Setting and Duration: The study was conducted at 103 Military Hospital from July 2024 to April 2025.

2.3. Study Population: The study included 83 patients diagnosed with myasthenia gravis who received treatment at the Department of Neurology, 103 Military Hospital, during the study period.

2.4. Inclusion Criteria: Participants were eligible if they met all of the following criteria:

+ Confirmed diagnosis of myasthenia gravis according to the 2022 Japanese diagnostic guidelines.

+ Disease classification based on the Osserman staging system.

+ Complete and accessible medical records.

+ Aged 18 years or older.

+ Provided informed consent to participate

2.5. Exclusion Criteria: Patients were excluded if they met any of the following conditions:

+ Incomplete medical records.

+ Inability to communicate or complete assessments.

+ History of psychiatric disorders before the onset of myasthenia gravis symptoms, or diagnosis of other psychiatric illnesses.

+ Refusal to participate in the study.

2.6. Study Variables: The following variables were recorded and analyzed: Educational level, Occupation, Disease duration, Severity of depression, Age at disease onset.

2.7. Data Collection Procedure

Step 1: Clinical and paraclinical examinations were conducted.

Step 2: Myasthenia gravis was diagnosed based on the 2022 Japanese diagnostic guidelines and staged according to the Osserman classification.

Step 3: Depressive disorders were diagnosed according to the DSM-5 criteria, and severity was assessed using the Beck Depression Inventory (BDI).

2.8. Data Processing and Analysis

Data were processed and analyzed using SPSS software version 24.0.

2.9. Ethical Considerations

The study protocol was reviewed and approved by the Ethics Committee of 103 Military Hospital.

3. RESULT

Table 1. General Characteristics of the Study Population

Variable	n	%
Education level		
Primary to secondary	51	61,45
College or University	30	36,14
Postgraduate	2	2,41
Occupation		
Manual labor	48	57,83
Intellectual work	35	42,17

The highest proportion of patients had an educational level ranging from primary to secondary school (61.45%). Those with a college or university education accounted for 36.14%, while only 2 patients (2.41%) held postgraduate degrees. Manual laborers comprised a higher percentage than intellectual workers, accounting for 57.83% and 42.17%, respectively.

Table 2. Age of Myasthenia Gravis Onset by Gender

Age at onset	Males		Females		Both males and females	
	n	%	n	%	n	%
< 20	3	12	10	17,24	13	15,66
20-39	5	20	32	55,17	37	44,58
40-59	10	40	14	24,14	24	28,92
≥ 60	7	28	2	3,45	9	10,84
Total	25	100	58	100	83	100
$\bar{X}$ ± SD	50,78± 12,37		32,13± 10,22		45,20 ± 12,01	
min-max	6 - 79		2 - 66		2 - 79	

The highest onset rate was observed in males in the 40–59 age group, accounting for 40.00%, followed by the ≥60 age group at 28.00%. In females, the highest onset rate was in the 20–39 age group (55.17%), with lower proportions in the 40–59 and <20 age groups, accounting for 24.14% and 17.24%, respectively. The mean age at onset of myasthenia

gravis for both genders was 45.20 ± 12.01 years, with a range of 2 to 79 years. Notably, the mean age at onset in males (50.78 ± 12.37 years) was higher than in females (32.13 ± 10.22 years).

Table 3. Disease Duration Characteristics

Disease Duration	n	%
Under 1 year	13	15,66
1 to 4 years	12	14,46
Over 4 years	58	69,88
Total	83	100
$\bar{X}$ ± SD	8,20 ± 7,38	
min - max	0,5 - 35	

The mean disease duration was 8.20 ± 7.38 years, ranging from 0.5 to 35 years. Patients were distributed across all duration groups. The highest proportion of patients (69.88%) had a disease duration of over 4 years.

Table 4. Severity of Depressive Disorders Based on the Beck Depression Inventory (n = 38)

Severity	Severity of Depressive Disorders	
	n	%
Mild	7	18,42
Moderate	26	68,42
Severe	5	13,16
Total	38	100

Among patients with depression, the predominant severity was moderate, accounting for 26 patients (68.42%), while mild and severe depression accounted for 18.42% and 13.16%, respectively.

Table 5. Distribution of Insomnia Rates by Occupation

Depressive disorder	Manual Labor		Intellectual work		p
	n	%	n	%	
Yes	26	54,2	12	34,3	0,347
No	22	45,8	23	65,7	
Total	48	100	35	100	

Patients engaged in manual labor had a higher prevalence of depressive disorder (54.2%) compared to those in intellectual work (34.3%). However, the difference was not statistically significant (p > 0.05).

Table 6. Distribution of Insomnia by Educational Level

Depressive disorder						
Primary to secondary		Collenge, University		Postgraduate		p
n	%	n	%	n	%	
Yes						0,221
21	41,2	16	53,3	1	50	
No						
30	58,8	14	46,7	1	50	
Total						
51	100	30	100	2	100	

Patients with college or university education had a higher prevalence of depressive disorder (53.3%) compared to those with primary to secondary education and postgraduate degrees, at 41.2% and 50%, respectively. However, the differences were not statistically significant (p > 0.05).

Table 7. Distribution of Insomnia by Age of Onset

Age at onset	Depressive disorder				p
	Yes		No		
	n	%	n	%	
< 20	3	7,9	10	22,2	0.445
20 - 39	19	50	18	40	
40 - 59	12	31,6	12	26,7	
≥ 60	4	10,5	5	11,1	
Total	38	100	45	100	

The highest prevalence of depressive disorder was observed in patients with an age of onset between 20–39 and 40–59 years, accounting for 50% and 31.6%, respectively. In contrast, the <20 and ≥60 age groups had lower rates of depressive disorder, at 7.9% and 10.5%, respectively. However, the differences in depressive disorder prevalence among these age groups were not statistically significant (p > 0.05).

Table 8. Association Between Depressive Disorder and Disease Duration

RLTC						p
Disease duration						
Under 1 year		1 to 4 years		Over 4 years		
n	%	n	%	n	%	
Yes						0,023
5	38,5	5	41,7	28	48,3	
No						
8	61,5	7	58,3	30	51,7	
Total						
13	100	12	100	58	100	

The group of patients with disease duration over 4 years had the highest prevalence of depressive disorder at 48.3%, followed by the 1–4 years group at 41.7%, and the under 1 year group at 38.5%. The differences were statistically significant ($p < 0.05$).

4. DISCUSSION

4.1. General Characteristics of the Study Population

4.1.1. Education Level and Occupation

The highest proportion of patients had primary to secondary education, while those with college or university education accounted for a lower percentage. Only 2 patients (2.41%) had postgraduate education. The majority of the study subjects were manual laborers (57.83%), which was higher than the number of intellectual workers (42.17%). Education level and occupation may influence the risk of disease and access to health information. Manual laborers are often exposed to chemicals, pesticides, and chronic stress, factors associated with autoimmune disorders like myasthenia gravis. Meanwhile, low education levels may limit early symptom recognition, access to healthcare services, and treatment adherence, thereby affecting outcomes. Our findings are consistent with previous global studies [4].

4.1.2. Age at Onset by Gender

In our study, the highest incidence of myasthenia gravis was observed in males aged 40–59 (40.00%), with a considerable proportion also in those aged ≥60 years (28.00%). For females, the highest incidence was in the 20–39 age group (55.17%). The mean age at onset of myasthenia gravis was 45.20 ± 12.01 years overall, with males at 50.78 ± 12.37 years and females at 32.13 ± 10.22 years. This difference may be related to endocrine and immune factors: estrogen in females promotes immune activity, leading to earlier disease onset, whereas testosterone in males has immunosuppressive effects, delaying disease onset. These results align with previous research [5].

4.1.3. Disease Duration Characteristics

As a chronic disease without a complete cure, myasthenia gravis patients often have long disease durations and treatment periods. In our study, more than two-thirds of patients (69.88%) had disease duration exceeding 4 years. The mean disease duration was 8.20 ± 7.38 years, ranging from 0.5 to 35 years. This reflects the chronic nature of myasthenia gravis, necessitating long-term treatment and continuous monitoring. Our findings are consistent with previous studies [6].

4.2. Characteristics of Depressive Disorder in the Study Population

4.2.1. Severity of Depressive Disorder According to Beck Depression Inventory (BDI)

Our study found that 45.78% of myasthenia gravis patients had depressive disorder (BDI ≥ 14), predominantly at moderate severity (68.42%), while mild and severe levels accounted for 18.42% and 13.16%, respectively. These results are consistent with previous studies [4].

4.3. Association Between Depressive Disorder and Study Population Characteristics

4.3.1. Distribution of Insomnia by Age of Onset

Our results indicate a trend toward lower age at onset among patients with depressive disorder compared to those without, although this difference was not statistically significant ($p > 0.05$). These findings align with those reported by Kulaksizoglu [4].

4.3.2. Association Between Depressive Disorder and Disease Duration

Our study demonstrated a positive correlation between disease duration and severity of

depressive disorder; the longer the myasthenia gravis duration, the more severe the depressive symptoms ($p < 0.05$). This reflects the profound emotional impact of the disease on patients. Increasing depression severity over time may be attributed to frequent myasthenic crises causing severe dyspnea and dysphagia, the burden of repeated medical visits and hospitalizations, as well as negative effects on aesthetics, work, and daily life. Prolonged disease duration often leads to frustration and hopelessness. Since myasthenia gravis is incurable and may progress rapidly through clinical stages, the increased intensity, duration, and frequency of crises significantly impair quality of life and increase treatment costs. Our findings are consistent with previous research [7].

5. CONCLUSION

Depressive disorder is common in myasthenia gravis patients and positively correlates with disease duration and severity of depression. Occupation, education level, and age at onset do not significantly affect depressive disorder.

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