

Sleep disorders in multiple sclerosis patients

S. Bader, E. Ellouz

Neurology department, gabes hospital, Tunisia

INTRODUCTION

Multiple sclerosis (MS) is a chronic autoimmune disease of the central nervous system (CNS) common in young adults. Patients with MS have a significant variety of problems that alter their quality of life including sleep disorders which are often under-diagnosed and poorly managed.

AIM

The aim of our study was to assess the prevalence of sleep disorders among multiple sclerosis patients and to explore their associated socio-demographic and clinical factors.

METHODS

- ✓ It was a cross-sectional study.
- ✓ Carried out on MS patients who consult in the neurology department of Gabes hospital.
- ✓ During a period of five months, from the 1st June 2021 to 25th October 2021.
- ✓ We used a pre-established sheet exploring the socio-demographic, clinical and therapeutic data of the patients.
- ✓ Sleep quality was assessed by the Pittsburgh Sleep Quality Index (PSQI).
- ✓ The State-Trait Anxiety Inventory (STAI) to diagnose anxiety
- ✓ The Expanded Disability Status Scale (EDSS) to quantify disability in MS patients.
- ✓ Data were analyzed using the software SPSS (20th edition).

RESULTS

Socio-demographic and clinical characteristics:

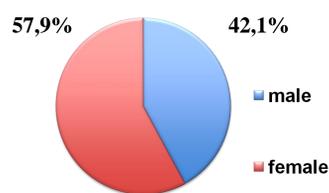


Fig1: Distribution of patients by sex

- Mean age : 31,5 years
- Married: 55,6%
- Urban origin: 84,2%
- Jobless : 84,2%
- High educational level: 68,4%
- Family history of MS: 10,5%.
- Family psychiatric history: 21,1%
- Personal psychiatric history: 26,3%

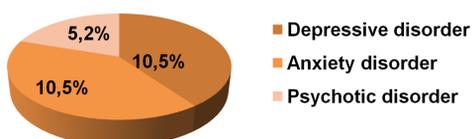


Fig 2: Distribution of MS patients according to personal psychiatric history

Table I : Clinical data of MS patients

Clinical data	MS patients
Remitting forme %	100
The average age of onset of the disease (years)	25 (19-48)
The average duration of the disease (years)	6 (1-13)
The onset type of the disease%	
Visual	57,9
Sensitive	31,6
motor	89,5
Cerebral Lesion%	
Frontal	89,5
Temporal	63,2
Parietal	10,5
Occipital	0
Cerebellar	26,3
Brainstem	52,6
Medullary	88,9
Periventricular white matter	94,7
Subcortical white matter	63,2
Juxtacortical white matter	10,5
Corp callosum	73,7
Cortical atrophy %	26,3
Gadolinium enhancement%	36,8

Sleep quality and quantity evaluation

Table II: Sleep characteristics

The average number of hours of sleep / day	6.4 ± 1.8 hours
Poor sleepers	26,3%
The mean duration of the sleep disorder	4 ± 1.5 months
The average recurrence of the sleep disorder	2.1 / week



Fig 3: Quality of sleep according to PSQI

Median STAI-trait score : 43.5
Median STAI-state score : 48,7

The prevalence of anxiety was 57,9%

Table II : Sleep disorder and its associated factors

Associated factors	P
Age	0,37
High educational level	0,31
Subcortical white matter	0,17
Anxiety symptoms	0,013

- Median PSQI score: 6,7 ± 3,8
- Median EDSS score : 2,9

PREVIEW:

In our study the prevalence of sleep disorders in multiple sclerosis patients was high (56,6% of cases). In the same line sleep disorders in the patients with MS are at higher frequency than the general population and depending on the study they range from 25% to 54% based on small series of patients [1].

The distribution by gender did not show a significant difference between men and women, which is similar to the results of Vitkova et al. thus, sleep disorders seem to affect both genders similarly [2].

Concerning the patients' age, we found a clear relationship between age and sleep disorders in MS patients, with an increased rate of sleep disorders occurring with age. Moreover, as the hormone production decreases with age, an inverse correlation with the frequency of low sleep quality, it has been suggested that melatonin deficit is at least partly responsible for sleep disorders. [3].

Some studies suggest that higher EDSS of MS patients is associated with a higher prevalence of sleep disorders, [4] but the majority of authors [5], In the same line with our study, did not find these relationships. It can be explained by the higher the disability, the more complications the patient has, such as fatigue, spasm, etc. that can affect the sleep quality.

We found a significant association between sleep disorder, anxiety (p=0,013) and educational level (p=0,31). A basic response to a perceived stressor, anxiety is highly associated with various sleep disturbances. Most individuals with anxiety disorders report difficulty with sleep initiation, maintenance, and decreased total sleep time compared with the general population [6]. Results indicate that MS patients with less education are at risk for experiencing anxiety and sleep disorders over time, in agreement with Bjelland et al. which found that lower levels of education were significantly associated with higher scores on anxiety/sleep disorders measures. Further, higher levels of education are associated with better self management, defined as an active process of coping with the disease through treatment adherence, self-care, active seeking of information about the illness and emerging treatment options, and emotional balance [7].

We found a significant association between sleep disorder and subcortical white matter (p=0,17) but evidence of specific central nervous system alterations possibly related to primary sleep disorders in MS are currently lacking and it presents an interesting line of research in the future.

CONCLUSION

Our results indicate that sleep disorders are common in MS patients. Age, anxiety symptoms and particular brain lesion were associated with the prevalence and severity of sleep disorders in MS patients. Screening and Managing sleep disorders and associated anxiety symptoms in MS patients may lead to improve their quality of life.

BIBLIOGRAPHY

- [1]. Merlino G, Fratticci L, Lenchig C, Valente M, Cargnelutti D, Picello M, et al. Prevalence of 'poor sleep' among patients with multiple sclerosis: an independent predictor of mental and physical status. Sleep Med 2009;10:26–34
- [2]. Vitkova M, Rosenberger J, Gdovinova Z, Szilasiova J, Mikula P, Groothoff JW, et al. Poor sleep quality in patients with multiple sclerosis: gender differences. Brain Behav. 2016;6:e00553.
- [3]. Flügel D. Schlafstörungen im Alter. Praxis. 2019;108:125–30
- [4]. Curcio G, Tempista D, Scarlata S, Marzano C, Moroni F, Rossini PM, et al. Validity of the Italian version of the Pittsburgh Sleep Quality Index (PSQI). Neurol Sci. 2013;34:511–9
- [5]. Stanton BR, Barnes F, Silbe E. Sleep and fatigue in multiple sclerosis. Mult Scler. 2006;12:481–6
- [6]. Uhde TW, Cortese BM, Vedeniapin A. Anxiety and sleep problems: emerging concepts and theoretical treatment implications. Curr Psychiatry Rep 2009; 11(4):269–76
- [7]. Bjelland, I., Krokstad, S., Mykletun, A., et al., 2008. Does a higher educational level protect against anxiety and depression? The hunt study. Soc. Sci. Med. 66, 1334–1345