

Relation between Fatigue and Sleep Disturbances in Multiple Sclerosis

Fatigue is one of the most common symptoms in MS and has been reported by 75-90% of MS patients. Persistent fatigue in MS is often rated by the patients as one of the most disabling symptoms as it has a great impact on the quality of life.

The aim of the present work was to examine sleep structure in the MS patients with fatigue compared to age and sex matched MS patients without fatigue and controls and to evaluate the relation between fatigue and sleep disturbances in MS.

The study was conducted on 30 subjects who included 20 MS patients (10 patients with fatigue and 10 patients without fatigue) and 10 healthy control subjects, age and sex matched.

All patients were subjected to thorough clinical assessment, clinical evaluation of fatigue, depression and excessive daytime sleepiness, as well as neuroradiological assessment. Patients and controls underwent whole night polysomnography.

There was no statistically significant difference between fatigued and non fatigued patients as regards age, sex, type of MS, disability, presence of major depression and excessive daytime sleepiness. However, fatigue is negatively correlated with the duration of illness but it did not reach to a significant value ($r=-0.025$, $P=0.45$).

And also, there was a trend towards significant positive correlation between fatigue and depression ($r=0.313$, $P=0.08$).

Neuroradiological assessment of patients showed a positive correlation between depression and the total MRI load ($r=0.43$, $P=0.029$). However, fatigue severity did not correlate with regional or global MRI plaques load. No significant difference were noted in any MRI measures between fatigued and non fatigued patients.

The polysomnographic study showed that sleep latency was prolonged in the fatigued patients ($P=0.038$) and was not affected in the non fatigued patients ($P=0.72$) compared with controls. Also, there was a positive correlation between fatigue and sleep latency ($r=0.391$, $P=0.04$).

Moreover, the sleep latency had a significantly positive correlation with depression ($r=0.409$, $P=0.037$). The prolonged sleep latency in our fatigued patients is attributed to presence of depression.

The present study showed that increased number of awakening, decreased total sleep time and sleep efficiency were present significantly in the fatigued patients ($P=0.001$, $P=0.012$, $P=0.06$ respectively) as well as non fatigued patients ($P=0.02$, $P=0.03$, $P=0.01$ respectively) compared to controls.

It was revealed that one patient (5%) of the fatigued group had the diagnosis of PLMS with PLMSI = 11.7. While, the non fatigued patients included two patients (10%) with sleep related breathing disorders (OSA).

No otherwise significant relation or correlation was found between different parameters in the MS patients.

So, the Polysomnographic data in our patients suggested that the MS patients had significant sleep disturbances. Fatigue in MS according to our results could be attributed to longer sleep latency which was related to presence of depression in our patients. The future research on fatigue in MS should be done

with exclusion of depression and exploring sleep disturbances in more details particularly its relationship with disease activity or other MS symptomatology.