Background: Subjective sleep problems, including difficulties falling asleep, waking up, un-restorative sleep and daytime sleepiness are highly prevalent in patients with juvenile fibromyalgia (JFM). Sleep disturbances has been considered a consequence of severe pain and depression, but also in healthy individuals sleep deprivation is also a risk factor for the development of chronic widespread pain, tenderness and fatigue, suggesting the important role of sleep in pain control and in the pathophysiology of fibromyalgia.

Objectives: To estimate the incidence of polysomnographic alterations in JFM and to explore the relationship between sleep problems and the musculoskeletal pain, fatigue and mood and anxiety disorders.

Methods: 21 patients (M: 3; F: 18; mean age 16,1) with JFM were included. The objective sleep quality was measured by overnight polysomnography (PSG) (using the EMBLETTA MPR PG device). PSG data were compared to age and sex-matched controls. The subjective sleep disturbances were assessed by the Sleep Condition Indicator (SCI). Musculoskeletal symptoms were evaluated by using the widespread pain index (WPI), Pain intensity was evaluated on a 0-10 visual analogical scale (PVAS). Fatigue was assessed by using the Symptom Severity (SS) questionnaire. Mood and anxiety disorders were evaluated by using the Children Depression Index (CDI) and the Multidimensional Anxiety Scale for Children (MASC). Comparison of categorical data was performed by means of the Fisher's Exact test. The relationship between sleep quality and clinical symptoms were assessed using Spearman's rank order correlation coefficient (rs). All statistical test were 2-sided and p values less than 0.05 were considered statistically significant.

Results: Nineteen out of 21 (90.5%) patients complained subjective sleep disturbances and un-restorative sleep. Seven out of 21 (33.3%) patients had mood and anxiety disorders. Eight out of 21 patients (38.1%) showed an electroencephalographic pattern of alpha wave intrusion in slow wave sleep (SWS). SCI was significantly correlated to CDI score rs -0,775 (p≤0,001), MASC 0,61 (p=0,005), WPI -0,731 (p=0,001), SSI 0,492 (p=0,038), PVAS -0,590 (p=0,006).

Conclusion: A substantial percentage of JFM patients experience sleep disturbances, which are, correlated with the severity of the musculoskeletal symptoms and mood and anxiety disorders. One third of JFM patients have alpha intrusion in the SWS. The important role of sleep in pain control suggests that the development of treatments to improve sleep quality may lead to more effective management of fibromyalgia in the future.

References:

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