

Abstract

Functional movement disorders (FMD), previously referred as psychogenic, are characterized by inconsistency and incogruence with organic neurological disorders. The original psychological models of FMD were replaced by a neurobiological model of the disease. The identification of neurophysiological correlates of FMD and their comorbidities may add to the so far limited knowledge of the pathophysiology of these disorders. This Thesis focuses on three thematic areas of FMD: 1. assessment of prevalence of comorbid restless legs syndrome (RLS) and periodic limb movements (PLM) as an objective marker of RLS using actigraphy; 2. analysis of reflexive and volitional eye movements using videooculography (VOG); 3. evaluation of emotional arousal objectively by pupillometry and subjectively using affective ratings of emotional pictures.

In total, 115 FMD patients and 76 age- and matched healthy controls participated in the studies. 1. FMD patients (N=96) presented with significantly higher prevalence of RLS (43,8 % vs. 7,9 %, $p<0,001$) and clinically relevant PLM (20,8 % vs. 2,6 %, $p=0,0002$) compared to controls. The association of RLS/PLM with FMD raises the possibility of common pathophysiological mechanisms of these conditions and has clinical implications in management of FMD. 2. VOG analyses showed normal reflexive and abnormal volitional eye movements in patients. Significantly higher error rate in antisaccades (38 % vs. 23 % in controls, $p<0,001$) and longer divergence latencies ($p<0,01$) are consistent with the proposed model of impaired attention mechanisms, inhibition of automatic reactions and explicit motor control in FMD. 3. In female FMD patients (N=24), no difference was found in the objectively measured arousal when watching emotional pictures. Patients rated significantly lower arousal of erotic pictures ($p=0,0001$). Our results suggest that the theoretical role of emotional hyperarousal in the pathophysiology of FMD should be revised. The mismatch between objective and subjective arousal is in line with recent findings of impaired interoception in FMD.