

***Fatigue and Reward System in Hemodialysis Patients: Integrating New Methods and Perspectives to Assess Chronic Patients***

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Nowadays there is a growing interest in finding new interventions to face debilitating symptoms of patients on chronic conditions. Among these, fatigue is a common symptom experienced by patients affected by end-stage renal failure on chronic hemodialysis (HD) that significantly affects their quality of life (QoL). Recently, research on neuro-immune interactions has demonstrated that an alteration of the basal ganglia function, regulated by dopamine, may translate in a reduced motivation and altered reward processes in other chronic diseases, such as hemodialysis patients. Thus, the aim of this study was to investigate a possible correlation between the severity of fatigue and the reward mechanisms that regulate the motivational behaviours, and how these mechanisms are affected in HD patients with a significant impact on their QoL. Evaluative scales have been administered to a sample of haemodialysis patients (N=94) older than 18 years, with no neurocognitive disease. Fatigue Severity Scale (FSS) has been applied to measure the impact of fatigue on motivation and social functionality. BIS/BAS Scale has been administered to investigate the mechanisms of reward: Behavioural Activation System (BAS) and Behavioural Inhibition System (BIS) result in behavioural inhibition/activation to rewards/punishments. Finally, State-Trait Anxiety Inventory (STAI-Y) and Beck Depression Inventory (BDI-II) have been used to evaluate the potential comorbidity of anxiety and depression disorders. The results show that the FSS score was significantly higher in HD patients with high BIS Z-score than in HD patients with low and medium BIS Z-score. Conversely, the BDI score and the STAI-Y1 and STAI-Y2 scores were similar among BIS Z-score groups of HD patients. The correlation between BIS score and FSS score was statistically significant. These data suggest that there is a correlation between fatigue severity symptoms and motivational disposition mechanisms that predispose to action inhibition with possible consequences on patients' engagement.