

**Efficacy of the combined treatment physiotherapy and dietary supplement based on whey protein with high biological value in people with Parkinson's disease: outcome research study**

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*Introduction:* Sarcopenia is one of the main problems in the most common neurological diseases; it leads to hypomobility and reduction of activities of daily life (ADL). This contributes to manifestation of fatigue, both physical and cognitive, in people with Parkinson's disease (PD). Physiotherapy has already manifested its positive correlation in the regression of sarcopenia; whey protein concentrate high in cysteine showed effectiveness on muscle tissue in people with severe chronic conditions.

*Objective:* The primary objective of our study is to combine the physiotherapy treatment to that of a new supplement on the market based on whey protein with high biological value, based on the concentration of the seriousness of late high in cysteine, in the reduction of fatigue in people with PD starting from the biological principle of sarcopenia reduction. The secondary objectives are to assess the impact of treatment also on Quality of Life (QoL) and walking.

*Methods:* People with PD diagnosed according to the Movement Disorder Society Clinical (MDSC) criteria were enrolled at Policlinico Umberto I in Rome from January to March 2023. Fatigue assessments were carried out before treatment (T0), after six weeks (T1) and twelve weeks (T2) using as outcome measures: Parkinson's Fatigue Scale (PFS-16), Fatigue Severity Scale (FSS), Performance-Oriented Mobility Assessment (POMA) and Parkinson's Disease Questionnaire (PDQ-39). The combined treatment included two weekly physiotherapy sessions and the concomitant intake of two daily sachets of Fortiral® for the duration of the study.

*Results:* 15 people with PD average age  $73\pm 6$  years were recruited (M:9; 60%). We found statistically significant results on fatigue and QoL.

*Conclusions:* The combined treatment of physiotherapy and dietary supplement intake based on protein concentrate and cysteine has already shown at six weeks a positive impact both on fatigue and QoL in people with PD. The 12-week figure was consolidated and reinforced by an improvement in walking and balance.